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      Godowski, Paul J.
      Grimaldi, Christopher J.
      Gurney, Austin L.
      Hillan, Kenneth J.
      Pan, James
      Paoni, Nicholas F.
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tatgccgctg gaaaagatgc caaaattttc tggatacctc tgtctcacat 1000

gccagcagct ttgcaagact ttttattgtt gaaacagaaa gcagagctgg 1050

ctaatcccaa ggcagtgtga ctcagctaac cacaaatgtc tcctccaggc 1100

tatgaaattg gccgatttca agaacacatc tccttttcaa ccccattcct 1150

tatctgctcc aacctggact catttagatc gtgcttattt ggattgcaaa 1200

agggagtccc accatcgctg gtggtatccc agggtccctg ctcaagtttt 1250

ctttgaaaag gagggctgga atggtacatc acataggcaa gtcctgccct 1300

gtatttaggc tttgcctgct tggtgtgatg taagggaaat tgaaagactt 1350

gcccattcaa aatgatcttt accgtggcct gccccatgct tatggtcccc 1400

agcatttaca gtaacttgtg aatgttaagt atcatctctt atctaaatat 1450

taaaagataa gtcaacccaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1500

aaaaaaaa 1508
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<210> 10
<211> 319
<212> PRT
<213> Homo sapiens

<220>
<221> sig_peptide
<222> 1-17
<223> Signal Peptide

<220>
<221> misc_feature

<222> 36-47, 108-113, 166-171,198-203, 207-212
<223> N-myristoylation Sites.

<220>
<221> misc_feature
<222> 39-42
<223> Glycosaminoglycan Attachment Site.

<220>
<221> TRANSMEM
<222> 136-152
<223> Transmembrane Domain

<220>
<221> misc_feature
<222> 161-163, 187-190 and 253-256
<223> N-glycosylation Sites.

<400> 10
```
Met Leu Phe Trp Val Leu Gly Leu Leu Ile Leu Cys Gly Phe Leu
 1               5               10              15

Trp Thr Arg Lys Gly Lys Leu Lys Ile Glu Asp Ile Thr Asp Lys
            20              25              30

Tyr Ile Phe Ile Thr Gly Cys Asp Ser Gly Phe Gly Asn Leu Ala
            35              40              45

Ala Arg Thr Phe Asp Lys Lys Gly Phe His Val Ile Ala Ala Cys
            50              55              60

Leu Thr Glu Ser Gly Ser Thr Ala Leu Lys Ala Glu Thr Ser Glu
            65              70              75

Arg Leu Arg Thr Val Leu Leu Asp Val Thr Asp Pro Glu Asn Val
            80              85              90

Lys Arg Thr Ala Gln Trp Val Lys Asn Gln Val Gly Glu Lys Gly
            95              100             105

Leu Trp Gly Leu Ile Asn Asn Ala Gly Val Pro Gly Val Leu Ala
            110             115             120

Pro Thr Asp Trp Leu Thr Leu Glu Asp Tyr Arg Glu Pro Ile Glu
            125             130             135

Val Asn Leu Phe Gly Leu Ile Ser Val Thr Leu Asn Met Leu Pro
            140             145             150

Leu Val Lys Lys Ala Gln Gly Arg Val Ile Asn Val Ser Ser Val
            155             160             165

Gly Gly Arg Leu Ala Ile Val Gly Gly Gly Tyr Thr Pro Ser Lys
            170             175             180

Tyr Ala Val Glu Gly Phe Asn Asp Ser Leu Arg Arg Asp Met Lys
            185             190             195
```

18

```
Ala Phe Gly Val His Val Ser Cys Ile Glu Pro Gly Leu Phe Lys
            200             205             210

Thr Asn Leu Ala Asp Pro Val Lys Val Ile Glu Lys Lys Leu Ala
            215             220             225

Ile Trp Glu Gln Leu Ser Pro Asp Ile Lys Gln Gln Tyr Gly Glu
            230             235             240

Gly Tyr Ile Glu Lys Ser Leu Asp Lys Leu Lys Gly Asn Lys Ser
            245             250             255

Tyr Val Asn Met Asp Leu Ser Pro Val Val Glu Cys Met Asp His
            260             265             270

Ala Leu Thr Ser Leu Phe Pro Lys Thr His Tyr Ala Ala Gly Lys
            275             280             285

Asp Ala Lys Ile Phe Trp Ile Pro Leu Ser His Met Pro Ala Ala
            290             295             300

Leu Gln Asp Phe Leu Leu Leu Lys Gln Lys Ala Glu Leu Ala Asn
            305             310             315

Pro Lys Ala Val  ..
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<210> 11
<211> 2720
<212> DNA
<213> Homo sapines

<400> 11

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gcgggctgtt gacggcgctg cgatggctgc ctgcgagggc aggagaagcg 50

gagctctcgg ttcctctcag tcggacttcc tgacgccgcc agtgggcggg 100

gccccttggg ccgtcgccac cactgtagtc atgtacccac cgccgccgcc 150

gccgcctcat cgggacttca tctcggtgac gctgagcttt ggcgagagct 200

atgacaacag caagagttgg cggcggcgct cgtgctggag gaaatggaag 250

caactgtcga gattgcagcg gaatatgatt ctcttcctcc ttgcctttct 300

gcttttctgt ggactcctct tctacatcaa cttggctgac cattggaaag 350

ctctggcttt caggctagag gaagagcaga agatgaggcc agaaattgct 400

gggttaaaac cagcaaatcc acccgtctta ccagctcctc agaaggcgga 450

caccgaccct gagaacttac ctgagatttc gtcacagaag acacaaagac 500

acatccagcg gggaccacct cacctgcaga ttagacccccc aagccaagac 550

ctgaaggatg ggacccagga ggaggccaca aaaaggcaag aagcccctgt 600

ggatccccgc ccggaaggag atccgcagag gacagtcatc agctggaggg 650
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gagcggtgat cgagcctgag cagggcaccg agctcccttc aagaagagca 700

gaagtgccca ccaagcctcc cctgccaccg gccaggacac agggcacacc 750

agtgcatctg aactatcgcc agaagggcgt gattgacgtc ttcctgcatg 800

catggaaagg ataccgcaag tttgcatggg gccatgacga gctgaagcct 850

gtgtccaggt ccttcagtga gtggtttggc ctcggtctca cactgatcga 900

cgcgctggac accatgtgga tcttgggtct gaggaaagaa tttgaggaag 950

ccaggaagtg ggtgtcgaag aagttacact ttgaaaagga cgtggacgtc 1000

aacctgtttg agagcacgat ccgcatcctg gggggctcc tgagtgccta 1050

ccacctgtct ggggacagcc tcttcctgag gaaagctgag gattttggaa 1100

atcggctaat gcctgccttc agaacaccat ccaagattcc ttactcggat 1150

gtgaacatcg gtactggagt tgcccacccg ccacggtgga cctccgacag 1200

cactgtggcc gaggtgacca gcattcagct ggagttccgg gagctctccc 1250

gtctcacagg ggataagaag tttcaggagg cagtggagaa ggtgacacag 1300

cacatccacg gcctgtctgg gaagaaggat gggctggtgc ccatgttcat 1350

caatacccac agtggcctct tcacccacct gggcgtattc acgctgggcg 1400

ccagggccga cagctactat gagtacctgc tgaagcagtg gatccaggc 1450

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caacctgctg cggccagaga ccgtggagag cctgttctac ctgtaccgcg 1850

tcacagggga ccgcaaatac caggactggg gctgggagat tctgcagagc 1900

ttcagccgat tcacacgggt ccctcgggt ggctattctt ccatcaacaa 1950

tgtccaggat cctcagaagc ccgagcctag ggacaagatg gagagcttct 2000

tcctggggga gacgctcaag tatctgttct tgctcttctc cgatgaccca 2050

aacctgctca gcctggacgc ctacgtgttc aacaccgaag cccaccctct 2100

20

```
gcctatctgg accccctgcct agggtggatg ctgctggtg tggggacttc 2150

gggtgggcag aggcaccttg ctgggtctgt ggcattttcc aagggcccac 2200

gtagcaccgg caaccgccaa gtggcccagg ctctgaactg gctctgggct 2250

cctcctcgtc tctgctttaa tcaggacacc gtgaggacaa gtgaggccgt 2300

cagtcttggt gtgatgcggg gtgggctggg ccgctggagc ctccgcctgc 2350

ttcctccaga agacacgaat catgactcac gattgctgaa gcctgagcag 2400

gtctctgtgg gccgaccaga gggggcttc gaggtggtcc ctggtactgg 2450

ggtgaccgag tggacagccc agggtgcagc tctgcccggg ctcgtgaagc 2500

ctcagatgtc cccaatccaa gggtctggag gggctgccgt gactccagag 2550

gcctgaggct ccagggctgg ctctggtgtt tacaagctgg actcagggat 2600

cctcctggcc gccccgcagg gggcttggag ggctggacgg caagtccgtc 2650

tagctcacgg gcccctccag tggaatgggt cttttcggtg gagataaaag 2700

ttgatttgct ctaaccgcaa 2720
```

<210> 12
<211> 699
<212> PRT
<213> Homo sapiens

<220>
<221> TRANSMEM
<222> 21-40 and 84-105
<223> Transmembrane Domain (type II)

<400> 12

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Met Ala Ala Cys Glu Gly Arg Arg Ser Gly Ala Leu Gly Ser Ser
 1               5                  10                  15

Gln Ser Asp Phe Leu Thr Pro Pro Val Gly Gly Ala Pro Trp Ala
                20                  25                  30

Val Ala Thr Thr Val Val Met Tyr Pro Pro Pro Pro Pro Pro
                35                  40                  45

His Arg Asp Phe Ile Ser Val Thr Leu Ser Phe Gly Glu Ser Tyr
                50                  55                  60

Asp Asn Ser Lys Ser Trp Arg Arg Arg Ser Cys Trp Arg Lys Trp
                65                  70                  75

Lys Gln Leu Ser Arg Leu Gln Arg Asn Met Ile Leu Phe Leu Leu
                80                  85                  90

Ala Phe Leu Leu Phe Cys Gly Leu Leu Phe Tyr Ile Asn Leu Ala
                95                  100                 105
```

21

```
Asp His Trp Lys Ala Leu Ala Phe Arg Leu Glu Glu Glu Gln Lys
            110                 115                 120

Met Arg Pro Glu Ile Ala Gly Leu Lys Pro Ala Asn Pro Pro Val
            125                 130                 135

Leu Pro Ala Pro Gln Lys Ala Asp Thr Asp Pro Glu Asn Leu Pro
            140                 145                 150

Glu Ile Ser Ser Gln Lys Thr Gln Arg His Ile Gln Arg Gly Pro
            155                 160                 165

Pro His Leu Gln Ile Arg Pro Pro Ser Gln Asp Leu Lys Asp Gly
            170                 175                 180

Thr Gln Glu Glu Ala Thr Lys Arg Gln Glu Ala Pro Val Asp Pro
            185                 190                 195

Arg Pro Glu Gly Asp Pro Gln Arg Thr Val Ile Ser Trp Arg Gly
            200                 205                 210

Ala Val Ile Glu Pro Glu Gln Gly Thr Glu Leu Pro Ser Arg Arg
            215                 220                 225

Ala Glu Val Pro Thr Lys Pro Pro Leu Pro Pro Ala Arg Thr Gln
            230                 235                 240

Gly Thr Pro Val His Leu Asn Tyr Arg Gln Lys Gly Val Ile Asp
            245                 250                 255

Val Phe Leu His Ala Trp Lys Gly Tyr Arg Lys Phe Ala Trp Gly
            260                 265                 270

His Asp Glu Leu Lys Pro Val Ser Arg Ser Phe Ser Glu Trp Phe
            275                 280                 285

Gly Leu Gly Leu Thr Leu Ile Asp Ala Leu Asp Thr Met Trp Ile
            290                 295                 300

Leu Gly Leu Arg Lys Glu Phe Glu Glu Ala Arg Lys Trp Val Ser
            305                 310                 315

Lys Lys Leu His Phe Glu Lys Asp Val Asp Val Asn Leu Phe Glu
            320                 325                 330

Ser Thr Ile Arg Ile Leu Gly Gly Leu Leu Ser Ala Tyr His Leu
            335                 340                 345

Ser Gly Asp Ser Leu Phe Leu Arg Lys Ala Glu Asp Phe Gly Asn ·
            350                 355                 360

Arg Leu Met Pro Ala Phe Arg Thr Pro Ser Lys Ile Pro Tyr Ser
            365                 370                 375

Asp Val Asn Ile Gly Thr Gly Val Ala His Pro Pro Arg Trp Thr
            380                 385                 390

Ser Asp Ser Thr Val Ala Glu Val Thr Ser Ile Gln Leu Glu Phe
```

22

```
              395                    400                    405
Arg Glu Leu Ser Arg Leu Thr Gly Asp Lys Lys Phe Gln Glu Ala
              410                    415                    420
Val Glu Lys Val Thr Gln His Ile His Gly Leu Ser Gly Lys Lys
              425                    430                    435
Asp Gly Leu Val Pro Met Phe Ile Asn Thr His Ser Gly Leu Phe
              440                    445                    450
Thr His Leu Gly Val Phe Thr Leu Gly Ala Arg Ala Asp Ser Tyr
              455                    460                    465
Tyr Glu Tyr Leu Leu Lys Gln Trp Ile Gln Gly Gly Lys Gln Glu
              470                    475                    480
Thr Gln Leu Leu Glu Asp Tyr Val Glu Ala Ile Glu Gly Val Arg
              485                    490                    495
Thr His Leu Leu Arg His Ser Glu Pro Ser Lys Leu Thr Phe Val
              500                    505                    510
Gly Glu Leu Ala His Gly Arg Phe Ser Ala Lys Met Asp His Leu
              515                    520                    525
Val Cys Phe Leu Pro Gly Thr Leu Ala Leu Gly Val Tyr His Gly
              530                    535                    540
Leu Pro Ala Ser His Met Glu Leu Ala Gln Glu Leu Met Glu Thr
              545                    550                    555
Cys Tyr Gln Met Asn Arg Gln Met Glu Thr Gly Leu Ser Pro Glu
              560                    565                    570
Ile Val His Phe Asn Leu Tyr Pro Gln Pro Gly Arg Arg Asp Val
              575                    580                    585
Glu Val Lys Pro Ala Asp Arg His Asn Leu Leu Arg Pro Glu Thr
              590                    595                    600
Val Glu Ser Leu Phe Tyr Leu Tyr Arg Val Thr Gly Asp Arg Lys
              605                    610                    615
Tyr Gln Asp Trp Gly Trp Glu Ile Leu Gln Ser Phe Ser Arg Phe
              620                    625                    630
Thr Arg Val Pro Ser Gly Gly Tyr Ser Ser Ile Asn Asn Val Gln
              635                    640                    645
Asp Pro Gln Lys Pro Glu Pro Arg Asp Lys Met Glu Ser Phe Phe
              650                    655                    660
Leu Gly Glu Thr Leu Lys Tyr Leu Phe Leu Leu Phe Ser Asp Asp
              665                    670                    675
Pro Asn Leu Leu Ser Leu Asp Ala Tyr Val Phe Asn Thr Glu Ala
              680                    685                    690
```

23

His Pro Leu Pro Ile Trp Thr Pro Ala
                    695

<210> 13
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 13
 cgccagaagg gcgtgattga cgtc 24

<210> 14
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 14
 ccatccttct tcccagacag gccg 24

<210> 15
<211> 44
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-44
<223> Synthetic construct.

<400> 15
 gaagcctgtg tccaggtcct tcagtgagtg gtttggcctc ggtc 44

<210> 16
<211> 1524
<212> DNA
<213> Homo sapiens

<400> 16
 ggcgccgcgt aggcccggga ggccgggccg gccgggctgc gagcgcctgc 50

 cccatgcgcc gccgcctctc cgcacgatgt tcccctcgcg gaggaaagcg 100

 gcgcagctgc cctgggagga cggcaggtcc gggttgctct ccggcggcct 150

 ccctcggaag tgttccgtct tccacctgtt cgtggcctgc ctctcgctgg 200

 gcttcttctc cctactctgg ctgcagctca gctgctctgg ggacgtggcc 250

24

```
cgggcagtca ggggacaagg gcaggagacc tcgggccctc cccgtgcctg 300

cccccccagag ccgcccctg agcactggga agaagacgca tcctggggcc 350

cccaccgcct ggcagtgctg gtgcccttcc gcgaacgctt cgaggagctc 400

ctggtcttcg tgccccacat gcgccgcttc ctgagcagga agaagatccg 450

gcaccacatc tacgtgctca accaggtgga ccacttcagg ttcaaccggg 500

cagcgctcat caacgtgggc ttcctggaga gcagcaacag cacggactac 550

attgccatgc acgacgttga cctgctccct ctcaacgagg agctggacta 600

tggctttcct gaggctgggc ccttccacgt ggcctccccg gagctccacc 650

ctctctacca ctacaagacc tatgtcggcg gcatcctgct gctctccaag 700

cagcactacc ggctgtgcaa tgggatgtcc aaccgcttct ggggctgggg 750

ccgcgaggac gacgagttct accggcgcat taagggagct gggctccagc 800

ttttccgccc ctcgggaatc acaactgggt acaagacatt tcgccacctg 850

catgacccag cctggcggaa gagggaccag aagcgcatcg cagctcaaaa 900

acaggagcag ttcaaggtgg acagggaggg aggcctgaac actgtgaagt 950

accatgtggc ttcccgcact gccctgtctg tgggcggggc cccctgcact 1000

gtcctcaaca tcatgttgga ctgtgacaag accgccacac cctggtgcac 1050

attcagctga gctggatgga cagtgaggaa gcctgtacct acaggccata 1100

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atgtggagtg gccaggacca agacagcaag ctacgcaatt gcagccaccc 1200

ggccgccaag gcaggcttgg gctgggccag gacacgtggg gtgcctggga 1250

cgctgcttgc catgcacagt gatcagagag aggctggggt gtgtcctgtc 1300

cgggacccccc cctgccttcc tgctcacccct actctgacct ccttcacgtg 1350

cccaggcctg tgggtagtgg ggagggctga acaggacaac ctctcatcac 1400

cctactctga cctccttcac gtgcccaggc ctgtgggtag tggggagggc 1450

tgaacaggac aacctctcat cacccccaaa aaaaaaaaaa aaaaaaaaaa 1500

aaaaaaaaaa aaaaaaaaaa aaaa 1524
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<210> 17
<211> 327
<212> PRT
<213> Homo sapiens

<220>

<221> sig_peptide
<222> 1-42
<223> Signal peptide.

<220>
<221> misc_feature
<222> 19-25,65-71,247-253,285-291,303-310
<223> N-myristoylation site.

<220>
<221> misc_feature
<222> 27-31
<223> cAMP- and cGMP-dependent protein kinase phosphorylation site.

<220>
<221> TRANSMEM
<222> 29-49
<223> Transmembrane domain (type II).

<220>
<221> misc_feature
<222> 154-158
<223> N-glycosylation site.

<220>
<221> misc_feature
<222> 226-233
<223> Tyrosine kinase phosphorylation site.

<400> 17

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Met Phe Pro Ser Arg Arg Lys Ala Ala Gln Leu Pro Trp Glu Asp
 1               5                  10                  15

Gly Arg Ser Gly Leu Leu Ser Gly Gly Leu Pro Arg Lys Cys Ser
                 20                  25                  30

Val Phe His Leu Phe Val Ala Cys Leu Ser Leu Gly Phe Phe Ser
                 35                  40                  45

Leu Leu Trp Leu Gln Leu Ser Cys Ser Gly Asp Val Ala Arg Ala
                 50                  55                  60

Val Arg Gly Gln Gly Gln Glu Thr Ser Gly Pro Pro Arg Ala Cys
                 65                  70                  75

Pro Pro Glu Pro Pro Pro Glu His Trp Glu Glu Asp Ala Ser Trp
                 80                  85                  90

Gly Pro His Arg Leu Ala Val Leu Val Pro Phe Arg Glu Arg Phe
                 95                 100                 105

Glu Glu Leu Leu Val Phe Val Pro His Met Arg Arg Phe Leu Ser
                110                 115                 120

Arg Lys Lys Ile Arg His His Ile Tyr Val Leu Asn Gln Val Asp
                125                 130                 135

His Phe Arg Phe Asn Arg Ala Ala Leu Ile Asn Val Gly Phe Leu
```

26

```
                    140                         145                         150
    Glu Ser Ser Asn Ser Thr Asp Tyr Ile Ala Met His Asp Val Asp
                    155                         160                         165
    Leu Leu Pro Leu Asn Glu Glu Leu Asp Tyr Gly Phe Pro Glu Ala
                    170                         175                         180
    Gly Pro Phe His Val Ala Ser Pro Glu Leu His Pro Leu Tyr His
                    185                         190                         195
    Tyr Lys Thr Tyr Val Gly Gly Ile Leu Leu Leu Ser Lys Gln His
                    200                         205                         210
    Tyr Arg Leu Cys Asn Gly Met Ser Asn Arg Phe Trp Gly Trp Gly
                    215                         220                         225
    Arg Glu Asp Asp Glu Phe Tyr Arg Arg Ile Lys Gly Ala Gly Leu
                    230                         235                         240
    Gln Leu Phe Arg Pro Ser Gly Ile Thr Thr Gly Tyr Lys Thr Phe
                    245                         250                         255
    Arg His Leu His Asp Pro Ala Trp Arg Lys Arg Asp Gln Lys Arg
                    260                         265                         270
    Ile Ala Ala Gln Lys Gln Glu Gln Phe Lys Val Asp Arg Glu Gly
                    275                         280                         285
    Gly Leu Asn Thr Val Lys Tyr His Val Ala Ser Arg Thr Ala Leu
                    290                         295                         300
    Ser Val Gly Gly Ala Pro Cys Thr Val Leu Asn Ile Met Leu Asp
                    305                         310                         315
    Cys Asp Lys Thr Ala Thr Pro Trp Cys Thr Phe Ser
                    320                         325
```

<210> 18
<211> 23
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-23
<223> Synthetic construct.

<400> 18
 gcgaacgctt cgaggagtcc tgg 23

<210> 19
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence

27

<222> 1-24
<223> Synthetic construct

<400> 19
 gcagtgcggg aagccacatg gtac 24

<210> 20
<211> 46
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-46
<223> Synthetic construct.

<400> 20
 cttcctgagc aggaagaaga tccggcacca catctacgtg ctcaac 46

<210> 21
<211> 494
<212> DNA
<213> Homo sapiens

<400> 21
 caatgtttgc ctatccacct cccccaagcc cctttaccta tgctgctgct 50

 aacgctgctg ctgctgctgc tgctgcttaa aggctcatgc ttggagtggg 100

 gactggtcgg tgcccagaaa gtctcttctg ccactgacgc ccccatcagg 150

 gattgggcct tctttccccc ttcctttctg tgtctcctgc ctcatcggcc 200

 tgccatgacc tgcagccaag cccagccccg tggggaaggg gagaaagtgg 250

 gggatggcta agaaagctgg gagataggga acagaagagg gtagtgggtg 300

 ggctaggggg gctgccttat ttaaagtggt tgtttatgat tcttatacta 350

 atttatacaa agatattaag gccctgttca ttaagaaatt gttcccttcc 400

 cctgtgttca atgtttgtaa agattgttct gtgtaaatat gtctttataa 450

 taaacagtta aaagctgaaa aaaaaaaaaa aaaaaaaaaa aaaa 494

<210> 22
<211> 73
<212> PRT
<213> Homo sapiens

<220>
<221> sig_peptide
<222> 1-15
<223> Signal peptide.

<220>
<221> misc_feature
<222> 3-18

28

<223> Growth factor and cytokines receptors family.

<400> 22

```
Met Leu Leu Leu Thr Leu Leu Leu Leu Leu Leu Leu Leu Lys Gly
 1               5                  10                  15

Ser Cys Leu Glu Trp Gly Leu Val Gly Ala Gln Lys Val Ser Ser
             20                  25                  30

Ala Thr Asp Ala Pro Ile Arg Asp Trp Ala Phe Phe Pro Pro Ser
             35                  40                  45

Phe Leu Cys Leu Leu Pro His Arg Pro Ala Met Thr Cys Ser Gln
             50                  55                  60

Ala Gln Pro Arg Gly Glu Gly Glu Lys Val Gly Asp Gly
             65                  70
```

<210> 23
<211> 2883
<212> DNA
<213> Homo sapiens

<400> 23

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gggacccatg cggccgtgac ccccggctcc ctagaggccc agcgcagccg 50

cagcggacaa aggagcatgt ccgcgccggg gaaggcccgt cctccggccg 100

ccataaggct ccggtcgccg ctgggccccg ccgcgctcc tgcccgcccg 150

ggctccgggg cggcccgcta ggccagtgcg ccgccgctcg ccccgcaggc 200

cccggcccgc agcatggagc cacccggacg ccggcggggc cgcgcgcagc 250

cgccgctgtt gctgccgctc tcgctgttag cgctgctcgc gctgctggga 300

ggcggcggcg cggcggcgc cgcggcgctg cccgccggct gcaagcacga 350

tgggcggccc cgaggggctg gcagggcggc gggcgccgcc gagggcaagg 400

tggtgtgcag cagcctggaa ctcgcgcagg tcctgccccc agatactctg 450

cccaaccgca cggtcaccct gattctgagt aacaataaga tatccgagct 500

gaagaatggc tcattttctg ggttaagtct ccttgaaaga ttggacctcc 550

gaaacaatct tattagtagt atagatccag gtgccttctg gggactgtca 600

tctctaaaaa gattggatct gacaaacaat cgaataggat gtctgaatgc 650

agacatattt cgaggactca ccaatctggt tcggctaaac ctttcgggga 700

atttgttttc ttcattatct caaggaactt ttgattatct tgcgtcatta 750

cggtctttgg aattccagac tgagtatctt ttgtgtgact gtaacatact 800

gtggatgcat cgctgggtaa aggagaagaa catcacggta cgggatacca 850
```

29

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ggtgtgttta tcctaagtca ctgcaggccc aaccagtcac aggcgtgaag 900

caggagctgt tgacatgcga ccctccgctt gaattgccgt ctttctacat 950

gactccatct catcgccaag ttgtgtttga aggagacagc cttcctttcc 1000

agtgcatggc ttcatatatt gatcaggaca tgcaagtgtt gtggtatcag 1050

gatgggagaa tagttgaaac cgatgaatcg caaggtattt ttgttgaaaa 1100

gaacatgatt cacaactgct ccttgattgc aagtgcccta accatttcta 1150

atattcaggc tggatctact ggaaattggg ctgtcatgt ccagaccaaa 1200

cgtgggaata atacgaggac tgtggatatt gtggtattag agagttctgc 1250

acagtactgt cctccagaga gggtggtaaa caacaaaggt gacttcagat 1300

ggcccagaac attggcaggc attactgcat atctgcagtg tacgcggaac 1350

acccatggca gtgggatata tcccggaaac ccacaggatg agagaaaagc 1400

ttggcgcaga tgtgatagag gtggcttttg ggcagatgat gattattctc 1450

gctgtcagta tgcaaatgat gtcactagag ttctttatat gtttaatcag 1500

atgcccctca atcttaccaa tgccgtggca acagctcgac agttactggc 1550

ttacactgtg gaagcagcca acttttctga caaaatggat gttatatttg 1600

tggcagaaat gattgaaaaa tttggaagat ttaccaagga ggaaaaatca 1650

aaagagctag gtgacgtgat ggttgacatt gcaagtaaca tcatgttggc 1700

tgatgaacgt gtcctgtggc tggcgcagag ggaagctaaa gcctgcagta 1750

ggattgtgca gtgtcttcag cgcattgcta cctaccggct agccggtgga 1800

gctcacgttt attcaacata ttcacccaat attgctctgg aagcttatgt 1850

catcaagtct actggcttca cggggatgac ctgtaccgtg ttccagaaag 1900

tggcagcctc tgatcgtaca ggactttcgg attatgggag gcgggatcca 1950

gagggaaacc tggataagca gctgagcttt aagtgcaatg tttcaaatac 2000

attttcgagt ctggcactaa aggtatgtta cattctgcaa tcatttaaga 2050

ctatttacag ttaaattaga atgctccaaa tgttctgctt cgcaaaataa 2100

ccttattaaa agattttttt ttgcaggaag ataggtatta ttgcttttgc 2150

tactgtttta aagaaaacta accaggaaga actgcattac gactttcaag 2200

ggccctaggc attttttgcct ttgattccct ttcttcacat aaaaatatca 2250

gaaattacat tttataactg cagtggtata aatgcaaata tactattgtt 2300
```

30

```
acatgtgaaa aaatttatt tgacttaaaa gtttatttat ttgttttttt 2350

gctcctgatt ttaagacaat aagatgtttt catgggcccc taaaagtatc 2400

atgagccttt ggcactgcgc ctgccaagcc tagtggagaa gtcaaccctg 2450

agaccaggtg tttaatcaag caagctgtat atcaaaattt ttggcagaaa 2500

acacaaatat gtcatatatc tttttttaaa aaaagtattt cattgaagca 2550

agcaaaatga aagcattttt actgattttt aaaattggtg ctttagatat 2600

atttgactac actgtattga agcaaataga ggaggcacaa ctccagcacc 2650

ctaatggaac cacatttttt tcacttagct ttctgtgggc atgtgtaatt 2700

gtattctctg cggttttaa tctcacagta ctttatttct gtcttgtccc 2750

tcaataatat cacaaacaat attccagtca ttttaatggc tgcataataa 2800

ctgatccaac aggtgttagg tgttctggtt tagtgtgagc actcaataaa 2850

tattgaatga atgaacgaaa aaaaaaaaaa aaa 2883
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<210> 24
<211> 616
<212> PRT
<213> Homo sapiens

<220>
<221> sig_peptide
<222> 1-33
<223> Signal peptide.

<220>
<221> TRANSMEM
<222> 13-40
<223> Transmembrane domain (type II).

<400> 24

```
Met Glu Pro Pro Gly Arg Arg Arg Gly Arg Ala Gln Pro Pro Leu
 1               5                  10                  15

Leu Leu Pro Leu Ser Leu Leu Ala Leu Leu Ala Leu Leu Gly Gly
                20                  25                  30

Gly Gly Gly Gly Gly Ala Ala Ala Leu Pro Ala Gly Cys Lys His
                    35                  40                  45

Asp Gly Arg Pro Arg Gly Ala Gly Arg Ala Ala Gly Ala Ala Glu
                50                  55                  60

Gly Lys Val Val Cys Ser Ser Leu Glu Leu Ala Gln Val Leu Pro
                65                  70                  75

Pro Asp Thr Leu Pro Asn Arg Thr Val Thr Leu Ile Leu Ser Asn
                80                  85                  90
```

31

```
Asn Lys Ile Ser Glu Leu Lys Asn Gly Ser Phe Ser Gly Leu Ser
                95                    100                   105

Leu Leu Glu Arg Leu Asp Leu Arg Asn Asn Leu Ile Ser Ser Ile
                110                   115                   120

Asp Pro Gly Ala Phe Trp Gly Leu Ser Ser Leu Lys Arg Leu Asp
                125                   130                   135

Leu Thr Asn Asn Arg Ile Gly Cys Leu Asn Ala Asp Ile Phe Arg
                140                   145                   150

Gly Leu Thr Asn Leu Val Arg Leu Asn Leu Ser Gly Asn Leu Phe
                155                   160                   165

Ser Ser Leu Ser Gln Gly Thr Phe Asp Tyr Leu Ala Ser Leu Arg
                170                   175                   180

Ser Leu Glu Phe Gln Thr Glu Tyr Leu Leu Cys Asp Cys Asn Ile
                185                   190                   195

Leu Trp Met His Arg Trp Val Lys Glu Lys Asn Ile Thr Val Arg
                200                   205                   210

Asp Thr Arg Cys Val Tyr Pro Lys Ser Leu Gln Ala Gln Pro Val
                215                   220                   225

Thr Gly Val Lys Gln Glu Leu Leu Thr Cys Asp Pro Pro Leu Glu
                230                   235                   240

Leu Pro Ser Phe Tyr Met Thr Pro Ser His Arg Gln Val Val Phe
                245                   250                   255

Glu Gly Asp Ser Leu Pro Phe Gln Cys Met Ala Ser Tyr Ile Asp
                260                   265                   270

Gln Asp Met Gln Val Leu Trp Tyr Gln Asp Gly Arg Ile Val Glu
                275                   280                   285

Thr Asp Glu Ser Gln Gly Ile Phe Val Glu Lys Asn Met Ile His
                290                   295                   300

Asn Cys Ser Leu Ile Ala Ser Ala Leu Thr Ile Ser Asn Ile Gln
                305                   310                   315

Ala Gly Ser Thr Gly Asn Trp Gly Cys His Val Gln Thr Lys Arg
                320                   325                   330

Gly Asn Asn Thr Arg Thr Val Asp Ile Val Val Leu Glu Ser Ser
                335                   340                   345

Ala Gln Tyr Cys Pro Pro Glu Arg Val Val Asn Asn Lys Gly Asp
                350                   355                   360

Phe Arg Trp Pro Arg Thr Leu Ala Gly Ile Thr Ala Tyr Leu Gln
                365                   370                   375

Cys Thr Arg Asn Thr His Gly Ser Gly Ile Tyr Pro Gly Asn Pro
```

```
                 380                      385                      390
Gln Asp Glu Arg Lys Ala Trp Arg Arg Cys Asp Arg Gly Gly Phe
                 395                      400                      405
Trp Ala Asp Asp Asp Tyr Ser Arg Cys Gln Tyr Ala Asn Asp Val
                 410                      415                      420
Thr Arg Val Leu Tyr Met Phe Asn Gln Met Pro Leu Asn Leu Thr
                 425                      430                      435
Asn Ala Val Ala Thr Ala Arg Gln Leu Leu Ala Tyr Thr Val Glu
                 440                      445                      450
Ala Ala Asn Phe Ser Asp Lys Met Asp Val Ile Phe Val Ala Glu
                 455                      460                      465
Met Ile Glu Lys Phe Gly Arg Phe Thr Lys Glu Glu Lys Ser Lys
                 470                      475                      480
Glu Leu Gly Asp Val Met Val Asp Ile Ala Ser Asn Ile Met Leu
                 485                      490                      495
Ala Asp Glu Arg Val Leu Trp Leu Ala Gln Arg Glu Ala Lys Ala
                 500                      505                      510
Cys Ser Arg Ile Val Gln Cys Leu Gln Arg Ile Ala Thr Tyr Arg
                 515                      520                      525
Leu Ala Gly Gly Ala His Val Tyr Ser Thr Tyr Ser Pro Asn Ile
                 530                      535                      540
Ala Leu Glu Ala Tyr Val Ile Lys Ser Thr Gly Phe Thr Gly Met
                 545                      550                      555
Thr Cys Thr Val Phe Gln Lys Val Ala Ala Ser Asp Arg Thr Gly
                 560                      565                      570
Leu Ser Asp Tyr Gly Arg Arg Asp Pro Glu Gly Asn Leu Asp Lys
                 575                      580                      585
Gln Leu Ser Phe Lys Cys Asn Val Ser Asn Thr Phe Ser Ser Leu
                 590                      595                      600
Ala Leu Lys Val Cys Tyr Ile Leu Gln Ser Phe Lys Thr Ile Tyr
                 605                      610                      615
Ser
```

<210> 25
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24

<223> Synthetic construct

<400> 25
 gaggactcac caatctggtt cggc 24

<210> 26
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 26
 aactggaaag gaaggctgtc tccc 24

<210> 27
<211> 50
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 27
 gtaaaggaga agaacatcac ggtacgggat accaggtgtg tttatcctaa 50

<210> 28
<211> 683
<212> DNA
<213> Homo sapiens

<400> 28
 gcgtgggggat gtctaggagc tcgaaggtgg tgctgggcct ctcggtgctg 50

 ctgacggcgg ccacagtggc cggcgtacat gtgaagcagc agtgggacca 100

 gcagaggctt cgtgacggag ttatcagaga cattgagagg caaattcgga 150

 aaaaagaaaa cattcgtctt ttgggagaac agattatttt gactgagcaa 200

 cttgaagcag aaagagagaa gatgttattg gcaaaaggat ctcaaaaatc 250

 atgacttgaa tgtgaaatat ctgttggaca gacaacacga gtttgtgtgt 300

 gtgtgttgat ggagagtagc ttagtagtat cttcatcttt ttttttggtc 350

 actgtccttt taaacttgat caaataaagg acagtgggtc atataagtta 400

 ctgctttcag ggtcccttat atctgaataa aggagtgtgg gcagacactt 450

 tttggaagag tctgtctggg tgatcctggt agaagcccca ttagggtcac 500

 tgtccagtgc ttagggttgt tactgagaag cactgccgag cttgtgagaa 550

34

ggaagggatg gatagtagca tccacctgag tagtctgatc agtcggcatg 600

atgacgaagc cacgagaaca tcgacctcag aaggactgga ggaaggtgaa 650

gtggagggag agacgctcct gatcgtcgaa tcc 683

<210> 29
<211> 81
<212> PRT
<213> Homo sapiens

<220>
<221> sig_peptide
<222> 1-21
<223> Signal peptide.

<400> 29

```
Met Ser Arg Ser Ser Lys Val Val Leu Gly Leu Ser Val Leu Leu
 1               5                  10                  15

Thr Ala Ala Thr Val Ala Gly Val His Val Lys Gln Gln Trp Asp
                20                  25                  30

Gln Gln Arg Leu Arg Asp Gly Val Ile Arg Asp Ile Glu Arg Gln
                35                  40                  45

Ile Arg Lys Lys Glu Asn Ile Arg Leu Leu Gly Glu Gln Ile Ile
                50                  55                  60

Leu Thr Glu Gln Leu Glu Ala Glu Arg Glu Lys Met Leu Leu Ala
                65                  70                  75

Lys Gly Ser Gln Lys Ser
                80
```

<210> 30
<211> 2128
<212> DNA
<213> Homo sapiens

<400> 30

ctgtcgtctt tgcttcagcc gcagtcgcca ctggctgcct gaggtgctct 50

tacagcctgt tccaagtgtg gcttaatccg tctccaccac cagatctttc 100

tccgtggatt cctctgctaa gaccgctgcc atgccagtga cggtaacccg 150

caccaccatc acaaccacca cgacgtcatc ttcgggcctg gggtccccca 200

tgatcgtggg gtcccctcgg gccctgacac agcccctggg tctccttcgc 250

ctgctgcagc tggtgtctac ctgcgtggcc ttctcgctgg tggctagcgt 300

gggcgcctgg acggggtcca tgggcaactg gtccatgttc acctggtgct 350

tctgcttctc cgtgaccctg atcatcctca tcgtggagct gtgcgggctc 400

caggcccgct tcccccctgtc ttggcgcaac ttccccatca ccttcgcctg 450

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ctatgcggcc ctcttctgcc tctcggcctc catcatctac cccaccacct 500

atgtccagtt cctgtcccac ggccgttcgc gggaccacgc catcgccgcc 550

accttcttct cctgcatcgc gtgtgtggct tacgccaccg aagtggcctg 600

gacccgggcc cggcccggcg agatcactgg ctatatggcc accgtacccg 650

ggctgctgaa ggtgctggag accttcgttg cctgcatcat cttcgcgttc 700

atcagcgacc ccaacctgta ccagcaccag ccggccctgg agtggtgcgt 750

ggcggtgtac gccatctgct tcatcctagc ggccatcgcc atcctgctga 800

acctggggga gtgcaccaac gtgctaccca tccccttccc cagcttcctg 850

tcggggctgg ccttgctgtc tgtcctcctc tatgccaccg cccttgttct 900

ctggcccctc taccagttcg atgagaagta tggcggccag cctcggcgct 950

cgagagatgt aagctgcagc cgcagccatg cctactacgt gtgtgcctgg 1000

gaccgccgac tggctgtggc catcctgacg gccatcaacc tactggcgta 1050

tgtggctgac ctggtgcact ctgcccacct ggttttgtc aaggtctaag 1100

actctcccaa gaggctcccg ttccctctcc aacctctttg ttcttcttgc 1150

ccgagttttc tttatggagt acttctttcc tccgcctttc ctctgttttc 1200

ctcttcctgt ctcccctccc tcccaccttt ttctttcctt cccaattcct 1250

tgcactctaa ccagttcttg gatgcatctt cttccttccc tttcctcttg 1300

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agctgtttct ctttttcttt tctttctttt tttttttttt ttttaagacg 1400

gattctcact ctgtggccca ggctggagtg cagtggtgcg atctcagctc 1450

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caagtagctg ggaggacagg tgtgagctgc cgcacccagc ctgtttctct 1550

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gagacttctt tctctccttg cctccaccca cctccaaagg tgctgagctc 1700

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attgccaaag catgcctgcc caccctcgct gtgccttagt cagtgtgtac 1800

gtgtgtgtgt gtgtgtgttt ggggggtggg gggtgggtag ctggggattg 1850

ggccctcttt ctcccagtgg aggaaggtgt gcagtgtact tcccctttaa 1900
```

36

attaaaaaac atatatatat atatatttgg aggtcagtaa tttccaatgg 1950

gcgggaggca ttaagcaccg accctgggtc cctaggcccc gcctggcact 2000

cagccttgcc agagattggc tccagaattt ttgccaggct tacagaacac 2050

ccactgccta gaggccatct taaaggaagc aggggctgga tgcctttcat 2100

cccaactatt ctctgtggta tgaaaaag 2128

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<210> 31
<211> 322
<212> PRT
<213> Homo sapiens

<400> 31
Met Pro Val Thr Val Thr Arg Thr Thr Ile Thr Thr Thr Thr Thr
 1               5                  10                  15

Ser Ser Ser Gly Leu Gly Ser Pro Met Ile Val Gly Ser Pro Arg
                20                  25                  30

Ala Leu Thr Gln Pro Leu Gly Leu Leu Arg Leu Leu Gln Leu Val
                35                  40                  45

Ser Thr Cys Val Ala Phe Ser Leu Val Ala Ser Val Gly Ala Trp
                50                  55                  60

Thr Gly Ser Met Gly Asn Trp Ser Met Phe Thr Trp Cys Phe Cys
                65                  70                  75

Phe Ser Val Thr Leu Ile Ile Leu Ile Val Glu Leu Cys Gly Leu
                80                  85                  90

Gln Ala Arg Phe Pro Leu Ser Trp Arg Asn Phe Pro Ile Thr Phe
                95                  100                 105

Ala Cys Tyr Ala Ala Leu Phe Cys Leu Ser Ala Ser Ile Ile Tyr
                110                 115                 120

Pro Thr Thr Tyr Val Gln Phe Leu Ser His Gly Arg Ser Arg Asp
                125                 130                 135

His Ala Ile Ala Ala Thr Phe Phe Ser Cys Ile Ala Cys Val Ala
                140                 145                 150

Tyr Ala Thr Glu Val Ala Trp Thr Arg Ala Arg Pro Gly Glu Ile
                155                 160                 165

Thr Gly Tyr Met Ala Thr Val Pro Gly Leu Leu Lys Val Leu Glu
                170                 175                 180

Thr Phe Val Ala Cys Ile Ile Phe Ala Phe Ile Ser Asp Pro Asn
                185                 190                 195

Leu Tyr Gln His Gln Pro Ala Leu Glu Trp Cys Val Ala Val Tyr
                200                 205                 210
```

37


```
Ala Ile Cys Phe Ile Leu Ala Ala Ile Ala Ile Leu Leu Asn Leu
                215             220                 225

Gly Glu Cys Thr Asn Val Leu Pro Ile Pro Phe Pro Ser Phe Leu
                230             235                 240

Ser Gly Leu Ala Leu Leu Ser Val Leu Leu Tyr Ala Thr Ala Leu
                245             250                 255

Val Leu Trp Pro Leu Tyr Gln Phe Asp Glu Lys Tyr Gly Gly Gln
                260             265                 270

Pro Arg Arg Ser Arg Asp Val Ser Cys Ser Arg Ser His Ala Tyr
                275             280                 285

Tyr Val Cys Ala Trp Asp Arg Arg Leu Ala Val Ala Ile Leu Thr
                290             295                 300

Ala Ile Asn Leu Leu Ala Tyr Val Ala Asp Leu Val His Ser Ala
                305             310                 315

His Leu Val Phe Val Lys Val
                320
```

<210> 32
<211> 3680
<212> DNA
<213> Homo sapiens

<400> 32
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gaacgtgcca ccatgcccag ctaatttttg tattttttagt agagacgggg 50

tttcaccatg ttggccaggc tggtcttgaa ctcgtgacct catgatccgc 100

tcacctcggc ctcccaaagt gctgggatta caggcatgag ccactgacgc 150

ctggccagcc tatgcatttt taagaaatta ttctgtatta ggtgctgtgc 200

taaacattgg gcactacagt gaccaaaaca gactgaattc cccaagagcc 250

aaagaccagt gagggagacc aacaagaaac aggaaatgca aaagagacca 300

ttattactca ctatgactaa gggtcacaaa tggggtacgt tgatggagag 350

tgatttgtta agagactaca gagggaggac agactaccaa gagggggggcc 400

aggaaagctc ctctgacgag gtggtatttc agcccaaact ggaagaatga 450

gaaagagcta gccagccatc agaatagtcc agaagagatg gggagcacta 500

cactcactac actttggcct gagaaaatag catgggattg gaggaggctg 550

ggggaacacc acttctgccg acctgggcag gaggcattga gggcttgaga 600

aagggcaatg gcagtagcag tagaaaggac agggtaggag cagggacttt 650

gcaggtggaa tcattaggtc ttatcaacag atatgggcaa gcaaagccag 700
```

38

```
gggagaattg atggtaatgc tgaggtttgg agccaggcta gatgggacag 750

tggtgggtga tgcaaaggaa agaggtcagg aagcagggcc agacgtgggg 800

agaaggtgtg ggggtttggt ttccatcttg ccgagtctgc cggaatgtgg 850

atgggaagac caagaggagg agcaaggggc agaggggaag ggaatcttaa 900

agaagtcctg gatgccacac tcttcttcct tcctcctctt ccctctcctc 950

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gggtgctggg aaagtggagg attagctgaa gttttgcttc tcggggcctg 1050

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cttatcatct tacatttccc tgtagccact gggacatatg tggtgttcct 1150

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ggggaaggtc attgctgtca gagggcact gactttctaa tggtgttacc 1250

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gcgatgagct gcttctcgcc aaactgcccc ccagccggga aagtgccttc 2150
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39

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cgcagcctgg gcccactgga ggcccaggac tcactctaca actcgcccct 2200

cacagagtcc tgcctttccc ccgcggagga ggagccagcc ccctgcaagg 2250

actgccagcc actctgccca ccactaacgg gcagctggga acggcagcgg 2300

caagcctctg acctggcctc ttctgggggtg gtgtccttag atgaggatga 2350

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cccagctggg ctcgtgctgt gcttcattca cctctccatc gtctctaaat 2950

cttcctcttt tttcctaaag acagaaggtt tttggtctgt tttttcagtc 3000

ggatcttctc ttctctggga ggctttggaa tgatgaaagc atgtaccctc 3050

caccctttc ctggccccct aatggggcct gggccctttc ccaacccctc 3100

ctaggatgtg cggcagtgt gctggcgcct cacagccagc cgggctgccc 3150

attcacgcag agctctctga gcgggaggtg gaagaaagga tggctctggt 3200

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cacaggggtg gccgggagtt gtcagctgat gcctgctgag aggcaggaat 3300

tgtgccagtg agtgacagtc atgagggagt gtctcttctt ggggaggaaa 3350

gaaggtagag cctttctgtc tgaatgaaag gccaaggcta cagtacaggg 3400

ccccgcccca gccagggtgt taatgcccac gtagtggagg cctctggcag 3450

atcctgcatt ccaaggtcac tggactgtac gttttttatgg ttgtgggaag 3500

ggtgggtggc tttagaatta agggccttgt aggctttggc aggtaagagg 3550

gcccaaggta agaacgagag ccaacgggca caagcattct atatataagt 3600
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40

ggctcattag gtgtttattt tgttctattt aagaatttgt tttattaaat 3650

taatataaaa atctttgtaa atctctaaaa 3680

<210> 33
<211> 335
<212> PRT
<213> Homo sapiens

<400> 33

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Met Phe Leu Ala Thr Leu Ser Phe Leu Leu Pro Phe Ala His Pro
 1               5                  10                  15

Phe Gly Thr Val Ser Cys Glu Tyr Met Leu Gly Ser Pro Leu Ser
                20                  25                  30

Ser Leu Ala Gln Val Asn Leu Ser Pro Phe Ser His Pro Lys Val
                35                  40                  45

His Met Asp Pro Asn Tyr Cys His Pro Ser Thr Ser Leu His Leu
                50                  55                  60

Cys Ser Leu Ala Trp Ser Phe Thr Arg Leu Leu His Pro Pro Leu
                65                  70                  75

Ser Pro Gly Ile Ser Gln Val Val Lys Asp His Val Thr Lys Pro
                80                  85                  90

Thr Ala Met Ala Gln Gly Arg Val Ala His Leu Ile Glu Trp Lys
                95                 100                 105

Gly Trp Ser Lys Pro Ser Asp Ser Pro Ala Ala Leu Glu Ser Ala
               110                 115                 120

Phe Ser Ser Tyr Ser Asp Leu Ser Glu Gly Glu Gln Glu Ala Arg
               125                 130                 135

Phe Ala Ala Gly Val Ala Glu Gln Phe Ala Ile Ala Glu Ala Lys
               140                 145                 150

Leu Arg Ala Trp Ser Ser Val Asp Gly Glu Asp Ser Thr Asp Asp
               155                 160                 165

Ser Tyr Asp Glu Asp Phe Ala Gly Gly Met Asp Thr Asp Met Ala
               170                 175                 180

Gly Gln Leu Pro Leu Gly Pro His Leu Gln Asp Leu Phe Thr Gly
               185                 190                 195

His Arg Phe Ser Arg Pro Val Arg Gln Gly Ser Val Glu Pro Glu
               200                 205                 210

Ser Asp Cys Ser Gln Thr Val Ser Pro Asp Thr Leu Cys Ser Ser
               215                 220                 225

Leu Cys Ser Leu Glu Asp Gly Leu Leu Gly Ser Pro Ala Arg Leu
               230                 235                 240
```

41

```
Ala Ser Gln Leu Leu Gly Asp Glu Leu Leu Leu Ala Lys Leu Pro
                245                 250                 255

Pro Ser Arg Glu Ser Ala Phe Arg Ser Leu Gly Pro Leu Glu Ala
                260                 265                 270

Gln Asp Ser Leu Tyr Asn Ser Pro Leu Thr Glu Ser Cys Leu Ser
                275                 280                 285

Pro Ala Glu Glu Glu Pro Ala Pro Cys Lys Asp Cys Gln Pro Leu
                290                 295                 300

Cys Pro Pro Leu Thr Gly Ser Trp Glu Arg Gln Arg Gln Ala Ser
                305                 310                 315

Asp Leu Ala Ser Ser Gly Val Val Ser Leu Asp Glu Asp Glu Ala
                320                 325                 330

Glu Pro Glu Glu Gln
                335
```

```
<210> 34
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-25
<223> Synthetic construct

<400> 34
 tgtcctttgt cccagacttc tgtcc 25

<210> 35
<211> 50
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 35
 ctggatgcta atgtgtccag taaatgatcc ccttatcccg tcgcgatgct 50

<210> 36
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-25
<223> Synthetic construct.

<400> 36
```

```
     ttccactcaa tgaggtgagc cactc 25

<210> 37
<211> 23
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-23
<223> Synthetic construct.

<400> 37
 ggcgagccct aactatccag gag 23

<210> 38
<211> 39
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-39
<223> Synthetic construct.

<400> 38
 ggagatcgct gcgctggcca ggtcctccct gcatggtat 39

<210> 39
<211> 22
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-22
<223> Synthetic construct.

<400> 39
 ctgctgcaaa gcgagcctct tg 22

<210> 40
<211> 2084
<212> DNA
<213> Homo sapiens

<400> 40
 ggttcctggg cgctctgtta cacaagcaag atacagccag ccccacctaa 50

 ttttgtttcc ctggcaccct cctgctcagt gcgacattgt cacacttaac 100

 ccatctgttt tctctaatgc acgacagatt cctttcagac aggacaactg 150

 tgatatttca gttcctgatt gtaaatacct cctaagcctg aagcttctgt 200

 tactagccat tgtgagcttc agtttcttca tctgcaaaat gggcataata 250

 caatctattc ttgccacatc aagggattgt tattcctttta aaaaaaaacc 300
```

43

```
aataccaaag aagcctacaa tgttggcctt agccaaaatt ctgttgattt 350

caacgttgtt ttattcactt ctatcgggga gccatggaaa agaaaatcaa 400

gacataaaca caacacagaa cattgcagaa gttttaaaa caatggaaaa 450

taaacctatt tctttggaaa gtgaagcaaa cttaaactca gataagaaa 500

atataaccac ctcaaatctc aaggcgagtc attcccctcc tttgaatcta 550

cccaacaaca gccacggaat aacagatttc tccagtaact catcagcaga 600

gcattctttg ggcagtctaa aacccacatc taccatttcc acaagccctc 650

ccttgatcca tagctttgtt tctaaagtgc cttggaatgc acctatagca 700

gatgaagatc ttttgcccat ctcagcacat cccaatgcta cacctgctct 750

gtcttcagaa aacttcactt ggtctttggt caatgacacc gtgaaaactc 800

ctgataacag ttccattaca gttagcatcc tctcttcaga accaacttct 850

ccatctgtga cccccttgat agtggaacca agtggatggc ttaccacaaa 900

cagtgatagc ttcactgggt ttacccctta tcaagaaaaa acaactctac 950

agcctacctt aaaattcacc aataattcaa aactctttcc aaatacgtca 1000

gatccccaaa aagaaaatag aaatacagga atagtattcg gggccatttt 1050

aggtgctatt ctgggtgtct cattgcttac tcttgtgggc tacttgttgt 1100

gtggaaaaag gaaaacggat tcattttccc atcggcgact ttatgacgac 1150

agaaatgaac cagttctgcg attagacaat gcaccggaac cttatgatgt 1200

gagttttggg aattctagct actacaatcc aactttgaat gattcagcca 1250

tgccagaaag tgaagaaaat gcacgtgatg gcattcctat ggatgacata 1300

cctccacttc gtacttctgt atagaactaa cagcaaaaag gcgttaaaca 1350

gcaagtgtca tctacatcct agccttttga caaattcatc tttcaaaagg 1400

ttacacaaaa ttactgtcac gtggattttg tcaaggagaa tcataaaagc 1450

aggagaccag tagcagaaat gtagacagga tgtatcatcc aaaggttttc 1500

tttcttacaa tttttggcca tcctgaggca tttactaagt agccttaatt 1550

tgtattttag tagtattttc ttagtagaaa atatttgtgg aatcagataa 1600

aactaaaaga tttcaccatt acagccctgc ctcataacta aataataaaa 1650

attattccac caaaaaattc taaaacaatg aagatgactc tttactgctc 1700

tgcctgaagc cctagtacca taattcaaga ttgcattttc ttaaatgaaa 1750
```

44

```
attgaaaggg tgctttttaa agaaaatttg acttaaagct aaaaagagga 1800

catagcccag agtttctgtt attgggaaat tgaggcaata gaaatgacag 1850

acctgtattc tagtacgtta taattttcta gatcagcaca cacatgatca 1900

gcccactgag ttatgaagct gacaatgact gcattcaacg gggccatggc 1950

aggaaagctg accctaccca ggaaagtaat agcttcttta aaagtcttca 2000

aaggttttgg gaattttaac ttgtcttaat atatcttagg cttcaattat 2050

ttgggtgcct taaaaactca atgagaatca tggt 2084
```

<210> 41
<211> 334
<212> PRT
<213> Homo sapiens

<400> 41
```
Met Leu Ala Leu Ala Lys Ile Leu Leu Ile Ser Thr Leu Phe Tyr
 1               5                  10                  15

Ser Leu Leu Ser Gly Ser His Gly Lys Glu Asn Gln Asp Ile Asn
            20                  25                  30

Thr Thr Gln Asn Ile Ala Glu Val Phe Lys Thr Met Glu Asn Lys
            35                  40                  45

Pro Ile Ser Leu Glu Ser Glu Ala Asn Leu Asn Ser Asp Lys Glu
            50                  55                  60

Asn Ile Thr Thr Ser Asn Leu Lys Ala Ser His Ser Pro Pro Leu
            65                  70                  75

Asn Leu Pro Asn Asn Ser His Gly Ile Thr Asp Phe Ser Ser Asn
            80                  85                  90

Ser Ser Ala Glu His Ser Leu Gly Ser Leu Lys Pro Thr Ser Thr
            95                  100                 105

Ile Ser Thr Ser Pro Pro Leu Ile His Ser Phe Val Ser Lys Val
            110                 115                 120

Pro Trp Asn Ala Pro Ile Ala Asp Glu Asp Leu Leu Pro Ile Ser
            125                 130                 135

Ala His Pro Asn Ala Thr Pro Ala Leu Ser Ser Glu Asn Phe Thr
            140                 145                 150

Trp Ser Leu Val Asn Asp Thr Val Lys Thr Pro Asp Asn Ser Ser
            155                 160                 165

Ile Thr Val Ser Ile Leu Ser Ser Glu Pro Thr Ser Pro Ser Val
            170                 175                 180

Thr Pro Leu Ile Val Glu Pro Ser Gly Trp Leu Thr Thr Asn Ser
            185                 190                 195
```

45

```
Asp Ser Phe Thr Gly Phe Thr Pro Tyr Gln Glu Lys Thr Thr Leu
            200             205             210

Gln Pro Thr Leu Lys Phe Thr Asn Asn Ser Lys Leu Phe Pro Asn
            215             220             225

Thr Ser Asp Pro Gln Lys Glu Asn Arg Asn Thr Gly Ile Val Phe
            230             235             240

Gly Ala Ile Leu Gly Ala Ile Leu Gly Val Ser Leu Leu Thr Leu
            245             250             255

Val Gly Tyr Leu Leu Cys Gly Lys Arg Lys Thr Asp Ser Phe Ser
            260             265             270

His Arg Arg Leu Tyr Asp Asp Arg Asn Glu Pro Val Leu Arg Leu
            275             280             285

Asp Asn Ala Pro Glu Pro Tyr Asp Val Ser Phe Gly Asn Ser Ser
            290             295             300

Tyr Tyr Asn Pro Thr Leu Asn Asp Ser Ala Met Pro Glu Ser Glu
            305             310             315

Glu Asn Ala Arg Asp Gly Ile Pro Met Asp Asp Ile Pro Pro Leu
            320             325             330

Arg Thr Ser Val
```

```
<210> 42
<211> 1594
<212> DNA
<213> Homo sapiens

<400> 42
 aacaggatct cctcttgcag tctgcagccc aggacgctga ttccagcagc  50

 gccttaccgc gcagcccgaa gattcactat ggtgaaaatc gccttcaata  100

 cccctaccgc cgtgcaaaag gaggaggcgc ggcaagacgt ggaggccctc  150

 ctgagccgca cggtcagaac tcagatactg accggcaagg agctccgagt  200

 tgccacccag gaaaaagagg gctcctctgg gagatgtatg cttactctct  250

 taggcctttc attcatcttg gcaggactta ttgttggtgg agcctgcatt  300

 tacaagtact tcatgcccaa gagcaccatt taccgtggag agatgtgctt  350

 ttttgattct gaggatcctg caaattccct tcgtggagga gagcctaact  400

 tcctgcctgt gactgaggag gctgacattc gtgaggatga caacattgca  450

 atcattgatg tgcctgtccc cagtttctct gatagtgacc ctgcagcaat  500

 tattcatgac tttgaaaagg gaatgactgc ttacctggac ttgttgctgg  550
```

```
ggaactgcta tctgatgccc ctcaatactt ctattgttat gcctccaaaa 600

aatctggtag agctctttgg caaactggcg agtggcagat atctgcctca 650

aacttatgtg gttcgagaag acctagttgc tgtggaggaa attcgtgatg 700

ttagtaacct tggcatcttt atttaccaac tttgcaataa cagaaagtcc 750

ttccgccttc gtcgcagaga cctcttgctg ggtttcaaca aacgtgccat 800

tgataaatgc tggaagatta gacacttccc caacgaattt attgttgaga 850

ccaagatctg tcaagagtaa gaggcaacag atagagtgtc cttggtaata 900

agaagtcaga gatttacaat atgactttaa cattaaggtt tatgggatac 950

tcaagatatt tactcatgca tttactctat tgcttatgct ttaaaaaaag 1000

gaaaaaaaaa aaaactacta accactgcaa gctcttgtca aattttagtt 1050

taattggcat tgcttgtttt ttgaaactga aattacatga gtttcatttt 1100

ttctttgcat ttatagggtt tagatttctg aaagcagcat gaatatatca 1150

cctaacatcc tgacaataaa ttccatccgt tgtttttttt gtttgtttgt 1200

tttttctttt cctttaagta agctctttat tcatcttatg gtggagcaat 1250

tttaaaattt gaaatatttt aaattgtttt tgaacttttt gtgtaaaata 1300

tatcagatct caacattgtt ggtttctttt gttttcatt ttgtacaact 1350

ttcttgaatt tagaaattac atctttgcag ttctgttagg tgctctgtaa 1400

ttaacctgac ttatatgtga acaattttca tgagacagtc attttaact 1450

aatgcagtga ttctttctca ctactatctg tattgtggaa tgcacaaaat 1500

tgtgtaggtg ctgaatgctg taaggagttt aggttgtatg aattctacaa 1550

ccctataata aattttactc tatacaaaaa aaaaaaaaaa aaaa 1594
```

<210> 43
<211> 263
<212> PRT
<213> Homo sapiens

<400> 43

```
Met Val Lys Ile Ala Phe Asn Thr Pro Thr Ala Val Gln Lys Glu
 1               5                  10                  15

Glu Ala Arg Gln Asp Val Glu Ala Leu Leu Ser Arg Thr Val Arg
                 20                  25                  30

Thr Gln Ile Leu Thr Gly Lys Glu Leu Arg Val Ala Thr Gln Glu
                 35                  40                  45

Lys Glu Gly Ser Ser Gly Arg Cys Met Leu Thr Leu Leu Gly Leu
```

```
                50                        55                        60
    Ser Phe Ile Leu Ala Gly Leu Ile Val Gly Gly Ala Cys Ile Tyr
                    65                  70                      75

    Lys Tyr Phe Met Pro Lys Ser Thr Ile Tyr Arg Gly Glu Met Cys
                    80                  85                      90

    Phe Phe Asp Ser Glu Asp Pro Ala Asn Ser Leu Arg Gly Gly Glu
                    95                  100                     105

    Pro Asn Phe Leu Pro Val Thr Glu Glu Ala Asp Ile Arg Glu Asp
                    110                 115                     120

    Asp Asn Ile Ala Ile Ile Asp Val Pro Val Pro Ser Phe Ser Asp
                    125                 130                     135

    Ser Asp Pro Ala Ala Ile Ile His Asp Phe Glu Lys Gly Met Thr
                    140                 145                     150

    Ala Tyr Leu Asp Leu Leu Leu Gly Asn Cys Tyr Leu Met Pro Leu
                    155                 160                     165

    Asn Thr Ser Ile Val Met Pro Pro Lys Asn Leu Val Glu Leu Phe
                    170                 175                     180

    Gly Lys Leu Ala Ser Gly Arg Tyr Leu Pro Gln Thr Tyr Val Val
                    185                 190                     195

    Arg Glu Asp Leu Val Ala Val Glu Glu Ile Arg Asp Val Ser Asn
                    200                 205                     210

    Leu Gly Ile Phe Ile Tyr Gln Leu Cys Asn Asn Arg Lys Ser Phe
                    215                 220                     225

    Arg Leu Arg Arg Arg Asp Leu Leu Leu Gly Phe Asn Lys Arg Ala
                    230                 235                     240

    Ile Asp Lys Cys Trp Lys Ile Arg His Phe Pro Asn Glu Phe Ile
                    245                 250                     255

    Val Glu Thr Lys Ile Cys Gln Glu
                    260
```

<210> 44
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-24
<223> Synthetic construct.

<400> 44
 gaaagacacg acacagcagc ttgc 24

<210> 45

```
<211> 20
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-20
<223> Synthetic construct.

<400> 45
 gggaactgct atctgatgcc 20

<210> 46
<211> 26
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-26
<223> Synthetic construct.

<400> 46
 caggatctcc tcttgcagtc tgcagc 26

<210> 47
<211> 28
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-28
<223> Synthetic construct.

<400> 47
 cttctcgaac cacataagtt tgaggcag 28

<210> 48
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-25
<223> Synthetic construct.

<400> 48
 cacgattccc tccacagcaa ctggg 25

<210> 49
<211> 1969
<212> DNA
<213> Homo sapiens

<400> 49
 ggaggaggga gggcgggcag gcgccagccc agagcagccc cgggcaccag 50
```

49

```
cacggactct ctcttccagc ccaggtgccc cccactctcg ctccattcgg 100

cgggagcacc cagtcctgta cgccaaggaa ctggtcctgg gggcaccatg 150

gtttcggcgg cagcccccag cctcctcatc cttctgttgc tgctgctggg 200

gtctgtgcct gctaccgacg cccgctctgt gcccctgaag gccacgttcc 250

tggaggatgt ggcgggtagt ggggaggccg agggctcgtc ggcctcctcc 300

ccgagcctcc cgccaccctg accccggcc ctcagcccca catcgatggg 350

gccccagccc acaaccctgg ggggcccatc accccccacc aacttcctgg 400

atgggatagt ggacttcttc cgccagtacg tgatgctgat tgctgtggtg 450

ggctccctgg cctttctgct gatgttcatc gtctgtgccg cggtcatcac 500

ccggcagaag cagaaggcct cggcctatta cccatcgtcc ttccccaaga 550

agaagtacgt ggaccagagt gaccgggccg ggggcccccg ggccttcagt 600

gaggtccccg acagagcccc cgacagcagg cccgaggaag ccctggattc 650

ctcccggcag ctccaggccg acatcttggc cgccacccag aacctcaagt 700

cccccaccag ggctgcactg ggcggtgggg acggagccag gatggtggag 750

ggcaggggcg cagaggaaga ggagaagggc agccaggagg gggaccagga 800

agtccaggga catggggtcc cagtggagac accagaggcg caggaggagc 850

cgtgctcagg ggtccttgag ggggctgtgg tggccggtga gggccaaggg 900

gagctggaag ggtctctctt gttagcccag gaagcccagg accagtggg 950

tcccccccgaa agccctgtg cttgcagcag tgtccacccc agtgtctaac 1000

agtcctcccg ggctgccagc cctgactgtc gggcccccaa gtggtcacct 1050

ccccgtgtat gaaaaggcct tcagccctga ctgcttcctg acactccctc 1100

cttggcctcc ctgtggtgcc aatcccagca tgtgctgatt ctacagcagg 1150

cagaaatgct ggtccccggt gccccggagg aatcttacca agtgccatca 1200

tccttcacct cagcagcccc aaagggctac atcctacagc acagctcccc 1250

tgacaaagtg agggagggca cgtgtccctg tgacagccag gataaaacat 1300

cccccaaagt gctgggatta caggcgtgag ccaccgtgcc cggcccaaac 1350

tactttttaa aacagctaca gggtaaaatc ctgcagcacc cactctggaa 1400

aatactgctc ttaattttcc tgaaggtggc cccctgtttc tagttggtcc 1450

aggattaggg atgtggggta tagggcattt aaatcctctc aagcgctctc 1500
```

```
caagcacccc cggcctgggg gtgagtttct catcccgcta ctgctgctgg 1550

gatcaggttg aatgaatgga actcttcctg tctggcctcc aaagcagcct 1600

agaagctgag gggctgtgtt tgaggggacc tccaccctgg ggaagtccga 1650

ggggctgggg aagggtttct gacgcccagc ctggagcagg ggggccctgg 1700

ccaccccctg ttgctcacac attgtctggc agcctgtgtc cacaatattc 1750

gtcagtcctc dacagggagc ctgggctccg tcctgcttta gggaggctct 1800

ggcaggaggt cctctccccc atccctccat ctggggctcc cccaacctct 1850

gcacagctct ccaggtgctg agatataatg caccagcaca ataaaccttt 1900

attccggcct gaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1950

aaaaaaaaaa aaaaaaaga 1969
```

```
<210> 50
<211> 283
<212> PRT
<213> Homo sapiens

<400> 50
 Met Val Ser Ala Ala Ala Pro Ser Leu Leu Ile Leu Leu Leu Leu
  1               5                  10                  15

 Leu Leu Gly Ser Val Pro Ala Thr Asp Ala Arg Ser Val Pro Leu
                  20                  25                  30

 Lys Ala Thr Phe Leu Glu Asp Val Ala Gly Ser Gly Glu Ala Glu
                  35                  40                  45

 Gly Ser Ser Ala Ser Ser Pro Ser Leu Pro Pro Pro Trp Thr Pro
                  50                  55                  60

 Ala Leu Ser Pro Thr Ser Met Gly Pro Gln Pro Thr Thr Leu Gly
                  65                  70                  75

 Gly Pro Ser Pro Pro Thr Asn Phe Leu Asp Gly Ile Val Asp Phe
                  80                  85                  90

 Phe Arg Gln Tyr Val Met Leu Ile Ala Val Val Gly Ser Leu Ala
                  95                 100                 105

 Phe Leu Leu Met Phe Ile Val Cys Ala Ala Val Ile Thr Arg Gln
                 110                 115                 120

 Lys Gln Lys Ala Ser Ala Tyr Tyr Pro Ser Ser Phe Pro Lys Lys
                 125                 130                 135

 Lys Tyr Val Asp Gln Ser Asp Arg Ala Gly Gly Pro Arg Ala Phe
                 140                 145                 150

 Ser Glu Val Pro Asp Arg Ala Pro Asp Ser Arg Pro Glu Glu Ala
                 155                 160                 165
```

51

```
Leu Asp Ser Ser Arg Gln Leu Gln Ala Asp Ile Leu Ala Ala Thr
            170               175             180

Gln Asn Leu Lys Ser Pro Thr Arg Ala Ala Leu Gly Gly Gly Asp
            185               190             195

Gly Ala Arg Met Val Glu Gly Arg Gly Ala Glu Glu Glu Glu Lys
            200               205             210

Gly Ser Gln Glu Gly Asp Gln Glu Val Gln Gly His Gly Val Pro
            215               220             225

Val Glu Thr Pro Glu Ala Gln Glu Glu Pro Cys Ser Gly Val Leu
            230               235             240

Glu Gly Ala Val Val Ala Gly Glu Gly Gln Gly Glu Leu Glu Gly
            245               250             255

Ser Leu Leu Leu Ala Gln Glu Ala Gln Gly Pro Val Gly Pro Pro
            260               265             270

Glu Ser Pro Cys Ala Cys Ser Ser Val His Pro Ser Val
            275               280
```

<210> 51
<211> 1734
<212> DNA
<213> Homo sapiens

<400> 51

```
 gtggactctg agaagcccag gcagttgagg acaggagaga gaaggctgca 50

 gacccagagg gagggaggac agggagtcgg aaggaggagg acagaggagg 100

 gcacagagac gcagagcaag ggcggcaagg aggagaccct ggtgggagga 150

 agacactctg gagagagagg gggctgggca gagatgaagt tccaggggcc 200

 cctggcctgc ctcctgctgg ccctctgcct gggcagtggg gaggctggcc 250

 ccctgcagag cggagaggaa agcactggga caaatattgg ggaggccctt 300

 ggacatggcc tgggagacgc cctgagcgaa ggggtgggaa aggccattgg 350

 caaagaggcc ggaggggcag ctggctctaa agtcagtgag gcccttggcc 400

 aagggaccag agaagcagtt ggcactggag tcaggcaggt tccaggcttt 450

 ggcgcagcag atgctttggg caacagggtc ggggaagcag cccatgctct 500

 gggaaacact gggcacgaga ttggcagaca ggcagaagat gtcattcgac 550

 acggagcaga tgctgtccgc ggctcctggc agggggtgcc tggccacagt 600

 ggtgcttggg aaacttctgg aggccatggc atctttggct ctcaaggtgg 650

 ccttggaggc cagggccagg gcaatcctgg aggtctgggg actccgtggg 700
```

```
tccacggata ccccggaaac tcagcaggca gctttggaat gaatcctcag 750

ggagctccct ggggtcaagg aggcaatgga gggccaccaa actttgggac 800

caacactcag ggagctgtgg cccagcctgg ctatggttca gtgagagcca 850

gcaaccagaa tgaagggtgc acgaatcccc caccatctgg ctcaggtgga 900

ggctccagca actctggggg aggcagcggc tcacagtcgg gcagcagtgg 950

cagtggcagc aatggtgaca caacaatgg cagcagcagt ggtggcagca 1000

gcagtggcag cagcagtggc agcagcagtg gcggcagcag tggcggcagc 1050

agtggtggca gcagtggcaa cagtggtggc agcagaggtg acagcggcag 1100

tgagtcctcc tggggatcca gcaccggctc ctcctccggc aaccacggtg 1150

ggagcggcgg aggaaatgga cataaacccg ggtgtgaaaa gccagggaat 1200

gaagcccgcg ggagcgggga atctgggatt cagggcttca gaggacaggg 1250

agtttccagc aacatgaggg aaataagcaa agagggcaat cgcctccttg 1300

gaggctctgg agacaattat cgggggcaag ggtcgagctg gggcagtgga 1350

ggaggtgacg ctgttggtgg agtcaatact gtgaactctg agacgtctcc 1400

tgggatgttt aactttgaca ctttctggaa gaattttaaa tccaagctgg 1450

gtttcatcaa ctgggatgcc ataaacaagg accagagaag ctctcgcatc 1500

ccgtgacctc cagacaagga gccaccagat tggatgggag cccccacact 1550

ccctccttaa aacaccaccc tctcatcact aatctcagcc cttgcccttg 1600

aaataaacct tagctgcccc acaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1650

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1700

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1734
```

<210> 52
<211> 440
<212> PRT
<213> Homo sapiens

<400> 52

```
Met Lys Phe Gln Gly Pro Leu Ala Cys Leu Leu Leu Ala Leu Cys
1               5                   10                  15

Leu Gly Ser Gly Glu Ala Gly Pro Leu Gln Ser Gly Glu Glu Ser
                20                  25                  30

Thr Gly Thr Asn Ile Gly Glu Ala Leu Gly His Gly Leu Gly Asp
                35                  40                  45

Ala Leu Ser Glu Gly Val Gly Lys Ala Ile Gly Lys Glu Ala Gly
```

```
              50                    55                    60
Gly Ala Ala Gly Ser Lys Val Ser Glu Ala Leu Gly Gln Gly Thr
                65                    70                    75
Arg Glu Ala Val Gly Thr Gly Val Arg Gln Val Pro Gly Phe Gly
                80                    85                    90
Ala Ala Asp Ala Leu Gly Asn Arg Val Gly Glu Ala Ala His Ala
                95                   100                   105
Leu Gly Asn Thr Gly His Glu Ile Gly Arg Gln Ala Glu Asp Val
               110                   115                   120
Ile Arg His Gly Ala Asp Ala Val Arg Gly Ser Trp Gln Gly Val
               125                   130                   135
Pro Gly His Ser Gly Ala Trp Glu Thr Ser Gly Gly His Gly Ile
               140                   145                   150
Phe Gly Ser Gln Gly Gly Leu Gly Gly Gln Gly Gln Gly Asn Pro
               155                   160                   165
Gly Gly Leu Gly Thr Pro Trp Val His Gly Tyr Pro Gly Asn Ser
               170                   175                   180
Ala Gly Ser Phe Gly Met Asn Pro Gln Gly Ala Pro Trp Gly Gln
               185                   190                   195
Gly Gly Asn Gly Gly Pro Pro Asn Phe Gly Thr Asn Thr Gln Gly
               200                   205                   210
Ala Val Ala Gln Pro Gly Tyr Gly Ser Val Arg Ala Ser Asn Gln
               215                   220                   225
Asn Glu Gly Cys Thr Asn Pro Pro Pro Ser Gly Ser Gly Gly Gly
               230                   235                   240
Ser Ser Asn Ser Gly Gly Gly Ser Gly Ser Gln Ser Gly Ser Ser
               245                   250                   255
Gly Ser Gly Ser Asn Gly Asp Asn Asn Gly Ser Ser Ser Gly
               260                   265                   270
Gly Ser Ser Ser Gly Ser Ser Ser Gly Ser Ser Ser Gly Gly Ser
               275                   280                   285
Ser Gly Gly Ser Ser Gly Gly Ser Ser Gly Asn Ser Gly Gly Ser
               290                   295                   300
Arg Gly Asp Ser Gly Ser Glu Ser Ser Trp Gly Ser Ser Thr Gly
               305                   310                   315
Ser Ser Ser Gly Asn His Gly Gly Ser Gly Gly Gly Asn Gly His
               320                   325                   330
Lys Pro Gly Cys Glu Lys Pro Gly Asn Glu Ala Arg Gly Ser Gly
               335                   340                   345
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54

```
Glu Ser Gly Ile Gln Gly Phe Arg Gly Gln Gly Val Ser Ser Asn
              350         355             360

Met Arg Glu Ile Ser Lys Glu Gly Asn Arg Leu Leu Gly Gly Ser
              365         370             375

Gly Asp Asn Tyr Arg Gly Gln Gly Ser Ser Trp Gly Ser Gly Gly
              380         385             390

Gly Asp Ala Val Gly Gly Val Asn Thr Val Asn Ser Glu Thr Ser
              395         400             405

Pro Gly Met Phe Asn Phe Asp Thr Phe Trp Lys Asn Phe Lys Ser
              410         415             420

Lys Leu Gly Phe Ile Asn Trp Asp Ala Ile Asn Lys Asp Gln Arg
              425         430             435

Ser Ser Arg Ile Pro
              440
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<210> 53
<211> 3580
<212> DNA
<213> Homo sapiens

<400> 53
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 ctttgctgac catgttgttc ccttgctgga atattaccgg gacatcttca 150

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56

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<210> 54
<211> 280
<212> PRT
<213> Homo sapiens

57

<400> 54

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Met Cys Phe Leu Asn Lys Leu Leu Leu Leu Ala Val Leu Gly Trp
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Leu Phe Gln Ile Pro Thr Val Pro Glu Asp Leu Phe Phe Leu Glu
            20              25                      30

Glu Gly Pro Ser Tyr Ala Phe Glu Val Asp Thr Val Ala Pro Glu
            35              40                      45

His Gly Leu Asp Asn Ala Pro Val Val Asp Gln Gln Leu Leu Tyr
            50              55                      60

Thr Cys Cys Pro Tyr Ile Gly Glu Leu Arg Lys Leu Leu Ala Ser
            65              70                      75

Trp Val Ser Gly Ser Ser Gly Arg Ser Gly Gly Phe Met Arg Lys
            80              85                      90

Ile Thr Pro Thr Thr Thr Thr Ser Leu Gly Ala Gln Pro Ser Gln
            95             100                     105

Thr Ser Gln Gly Leu Gln Ala Gln Leu Ala Gln Ala Phe Phe His
           110             115                     120

Asn Gln Pro Pro Ser Leu Arg Arg Thr Val Glu Phe Val Ala Glu
           125             130                     135

Arg Ile Gly Ser Asn Cys Val Lys His Ile Lys Ala Thr Leu Val
           140             145                     150

Ala Asp Leu Val Arg Gln Ala Glu Ser Leu Leu Gln Glu Gln Leu
           155             160                     165

Val Thr Gln Gly Glu Glu Gly Gly Asp Pro Ala Gln Leu Leu Glu
           170             175                     180

Ile Leu Cys Ser Gln Leu Cys Pro His Gly Ala Gln Ala Leu Ala
           185             190                     195

Leu Gly Arg Glu Phe Cys Gln Arg Lys Ser Pro Gly Ala Val Arg
           200             205                     210

Ala Leu Leu Pro Glu Glu Thr Pro Ala Ala Val Leu Ser Ser Ala
           215             220                     225

Glu Asn Ile Ala Val Gly Leu Ala Thr Glu Lys Ala Cys Ala Trp
           230             235                     240

Leu Ser Ala Asn Ile Thr Ala Leu Ile Arg Arg Glu Val Lys Ala
           245             250                     255

Ala Val Ser Arg Thr Leu Arg Ala Gln Gly Pro Glu Pro Ala Ala
           260             265                     270

Arg Gly Glu Arg Arg Gly Cys Ser Arg Ala
           275             280
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58

<210> 55
<211> 2401
<212> DNA
<213> Homo sapiens

<400> 55
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59

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<210> 56
<211> 299
<212> PRT
<213> Homo sapiens

<400> 56
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Phe Ala Leu Ile Thr Ile Leu Ile Leu Tyr Ser Ser Asn Ser Ala
                20                  25                  30
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```
Asn Glu Val Phe His Tyr Gly Ser Leu Arg Gly Arg Ser Arg Arg
                35              40                  45

Pro Val Asn Leu Lys Lys Trp Ser Ile Thr Asp Gly Tyr Val Pro
                50              55                  60

Ile Leu Gly Asn Lys Thr Leu Pro Ser Arg Cys His Gln Cys Val
                65              70                  75

Ile Val Ser Ser Ser Ser His Leu Leu Gly Thr Lys Leu Gly Pro
                80              85                  90

Glu Ile Glu Arg Ala Glu Cys Thr Ile Arg Met Asn Asp Ala Pro
                95              100                 105

Thr Thr Gly Tyr Ser Ala Asp Val Gly Asn Lys Thr Thr Tyr Arg
                110             115 ·                120

Val Val Ala His Ser Ser Val Phe Arg Val Leu Arg Arg Pro Gln
                125             130                 135

Glu Phe Val Asn Arg Thr Pro Glu Thr Val Phe Ile Phe Trp Gly
                140             145 ·                150

Pro Pro Ser Lys Met Gln Lys Pro Gln Gly Ser Leu Val Arg Val
                155             160                 165

Ile Gln Arg Ala Gly Leu Val Phe Pro Asn Met Glu Ala Tyr Ala
                170             175                 180

Val Ser Pro Gly Arg Met Arg Gln Phe Asp Asp Leu Phe Arg Gly
                185             190                 195

Glu Thr Gly Lys Asp Arg Glu Lys Ser His Ser Trp Leu Ser Thr
                200             205                 210

Gly Trp Phe Thr Met Val Ile Ala Val Glu Leu Cys Asp His Val
                215             220                 225

His Val Tyr Gly Met Val Pro Pro Asn Tyr Cys Ser Gln Arg Pro
                230             235                 240

Arg Leu Gln Arg Met Pro Tyr His Tyr Tyr Glu Pro Lys Gly Pro
                245             250                 255

Asp Glu Cys Val Thr Tyr Ile Gln Asn Glu His Ser Arg Lys Gly
                260             265                 270

Asn His His Arg Phe Ile Thr Glu Lys Arg Val Phe Ser Ser Trp
                275             280                 285

Ala Gln Leu Tyr Gly Ile Thr Phe Ser His Pro Ser Trp Thr
                290             295
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<400> 57

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gaagtcttgt cgacatttat accgtctgag ggtagcagct cgaaactaga 250

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62

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63

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<210> 58
<211> 1115

64

<400> 58

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Val Thr Leu Ala Cys Leu Leu Leu Ala Thr Ala Gly Cys Phe Ala
                20              25                  30

Asp Leu Asn Glu Val Pro Gln Val Thr Val Gln Pro Ala Ser Thr
                35              40                  45

Val Gln Lys Pro Gly Gly Thr Val Ile Leu Gly Cys Val Val Glu
                50              55                  60

Pro Pro Arg Met Asn Val Thr Trp Arg Leu Asn Gly Lys Glu Leu
                65              70                  75

Asn Gly Ser Asp Asp Ala Leu Gly Val Leu Ile Thr His Gly Thr
                80              85                  90

Leu Val Ile Thr Ala Leu Asn Asn His Thr Val Gly Arg Tyr Gln
                95              100                 105

Cys Val Ala Arg Met Pro Ala Gly Ala Val Ala Ser Val Pro Ala
                110             115                 120

Thr Val Thr Leu Ala Asn Leu Gln Asp Phe Lys Leu Asp Val Gln
                125             130                 135

His Val Ile Glu Val Asp Glu Gly Asn Thr Ala Val Ile Ala Cys
                140             145                 150

His Leu Pro Glu Ser His Pro Lys Ala Gln Val Arg Tyr Ser Val
                155             160                 165

Lys Gln Glu Trp Leu Glu Ala Ser Arg Gly Asn Tyr Leu Ile Met
                170             175                 180

Pro Ser Gly Asn Leu Gln Ile Val Asn Ala Ser Gln Glu Asp Glu
                185             190                 195

Gly Met Tyr Lys Cys Ala Ala Tyr Asn Pro Val Thr Gln Glu Val
                200             205                 210

Lys Thr Ser Gly Ser Ser Asp Arg Leu Arg Val Arg Arg Ser Thr
                215             220                 225

Ala Glu Ala Ala Arg Ile Ile Tyr Pro Pro Glu Ala Gln Thr Ile
                230             235                 240

Ile Val Thr Lys Gly Gln Ser Leu Ile Leu Glu Cys Val Ala Ser
                245             250                 255

Gly Ile Pro Pro Pro Arg Val Thr Trp Ala Lys Asp Gly Ser Ser
                260             265                 270
```

```
Val Thr Gly Tyr Asn Lys Thr Arg Phe Leu Leu Ser Asn Leu Leu
            275             280                 285

Ile Asp Thr Thr Ser Glu Glu Asp Ser Gly Thr Tyr Arg Cys Met
            290             295                 300

Ala Asp Asn Gly Val Gly Gln Pro Gly Ala Ala Val Ile Leu Tyr
            305             310                 315

Asn Val Gln Val Phe Glu Pro Pro Glu Val Thr Met Glu Leu Ser
            320             325                 330

Gln Leu Val Ile Pro Trp Gly Gln Ser Ala Lys Leu Thr Cys Glu
            335             340                 345

Val Arg Gly Asn Pro Pro Pro Ser Val Leu Trp Leu Arg Asn Ala
            350             355                 360

Val Pro Leu Ile Ser Ser Gln Arg Leu Arg Leu Ser Arg Arg Ala
            365             370                 375

Leu Arg Val Leu Ser Met Gly Pro Glu Asp Glu Gly Val Tyr Gln
            380             385                 390

Cys Met Ala Glu Asn Glu Val Gly Ser Ala His Ala Val Val Gln
            395             400                 405

Leu Arg Thr Ser Arg Pro Ser Ile Thr Pro Arg Leu Trp Gln Asp
            410             415                 420

Ala Glu Leu Ala Thr Gly Thr Pro Pro Val Ser Pro Ser Lys Leu
            425             430                 435

Gly Asn Pro Glu Gln Met Leu Arg Gly Gln Pro Ala Leu Pro Arg
            440             445                 450

Pro Pro Thr Ser Val Gly Pro Ala Ser Pro Lys Cys Pro Gly Glu
            455             460                 465

Lys Gly Gln Gly Ala Pro Ala Glu Ala Pro Ile Ile Leu Ser Ser
            470             475                 480

Pro Arg Thr Ser Lys Thr Asp Ser Tyr Glu Leu Val Trp Arg Pro
            485             490                 495

Arg His Glu Gly Ser Gly Arg Ala Pro Ile Leu Tyr Tyr Val Val
            500             505                 510

Lys His Arg Lys Gln Val Thr Asn Ser Ser Asp Asp Trp Thr Ile
            515             520                 525

Ser Gly Ile Pro Ala Asn Gln His Arg Leu Thr Leu Thr Arg Leu
            530             535                 540

Asp Pro Gly Ser Leu Tyr Glu Val Glu Met Ala Ala Tyr Asn Cys
            545             550                 555

Ala Gly Glu Gly Gln Thr Ala Met Val Thr Phe Arg Thr Gly Arg
```

66

```
                    560                     565                     570
Arg Pro Lys Pro Glu Ile Met Ala Ser Lys Glu Gln Gln Ile Gln
                575                     580                     585
Arg Asp Asp Pro Gly Ala Ser Pro Gln Ser Ser Ser Gln Pro Asp
                590                     595                     600
His Gly Arg Leu Ser Pro Pro Glu Ala Pro Asp Arg Pro Thr Ile
                605                     610                     615
Ser Thr Ala Ser Glu Thr Ser Val Tyr Val Thr Trp Ile Pro Arg
                620                     625                     630
Gly Asn Gly Gly Phe Pro Ile Gln Ser Phe Arg Val Glu Tyr Lys
                635                     640                     645
Lys Leu Lys Lys Val Gly Asp Trp Ile Leu Ala Thr Ser Ala Ile
                650                     655                     660
Pro Pro Ser Arg Leu Ser Val Glu Ile Thr Gly Leu Glu Lys Gly
                665                     670                     675
Thr Ser Tyr Lys Phe Arg Val Arg Ala Leu Asn Met Leu Gly Glu
                680                     685                     690
Ser Glu Pro Ser Ala Pro Ser Arg Pro Tyr Val Val Ser Gly Tyr
                695                     700                     705
Ser Gly Arg Val Tyr Glu Arg Pro Val Ala Gly Pro Tyr Ile Thr
                710                     715                     720
Phe Thr Asp Ala Val Asn Glu Thr Thr Ile Met Leu Lys Trp Met
                725                     730                     735
Tyr Ile Pro Ala Ser Asn Asn Asn Thr Pro Ile His Gly Phe Tyr
                740                     745                     750
Ile Tyr Tyr Arg Pro Thr Asp Ser Asp Asn Asp Ser Asp Tyr Lys
                755                     760                     765
Lys Asp Met Val Glu Gly Asp Lys Tyr Trp His Ser Ile Ser His
                770                     775                     780'
Leu Gln Pro Glu Thr Ser Tyr Asp Ile Lys Met Gln Cys Phe Asn
                785                     790                     795
Glu Gly Gly Glu Ser Glu Phe Ser Asn Val Met Ile Cys Glu Thr
                800                     805                     810
Lys Ala Arg Lys Ser Ser Gly Gln Pro Gly Arg Leu Pro Pro Pro
                815                     820                     825
Thr Leu Ala Pro Pro Gln Pro Pro Leu Pro Glu Thr Ile Glu Arg
                830                     835                     840
Pro Val Gly Thr Gly Ala Met Val Ala Arg Ser Ser Asp Leu Pro
                845                     850                     855
```

67

```
Tyr Leu Ile Val Gly Val Val Leu Gly Ser Ile Val Leu Ile Ile
            860             865             870

Val Thr Phe Ile Pro Phe Cys Leu Trp Arg Ala Trp Ser Lys Gln
            875             880             885

Lys His Thr Thr Asp Leu Gly Phe Pro Arg Ser Ala Leu Pro Pro
            890             895             900

Ser Cys Pro Tyr Thr Met Val Pro Leu Gly Gly Leu Pro Gly His
            905             910             915

Gln Ala Ser Gly Gln Pro Tyr Leu Ser Gly Ile Ser Gly Arg Ala
            920             925             930

Cys Ala Asn Gly Ile His Met Asn Arg Gly Cys Pro Ser Ala Ala
            935             940             945

Val Gly Tyr Pro Gly Met Lys Pro Gln Gln His Cys Pro Gly Glu
            950             955             960

Leu Gln Gln Gln Ser Asp Thr Ser Ser Leu Leu Arg Gln Thr His
            965             970             975

Leu Gly Asn Gly Tyr Asp Pro Gln Ser His Gln Ile Thr Arg Gly
            980             985             990

Pro Lys Ser Ser Pro Asp Glu Gly Ser Phe Leu Tyr Thr Leu Pro
            995             1000            1005

Asp Asp Ser Thr His Gln Leu Leu Gln Pro His His Asp Cys Cys
            1010            1015            1020

Gln Arg Gln Glu Gln Pro Ala Ala Val Gly Gln Ser Gly Val Arg
            1025            1030            1035

Arg Ala Pro Asp Ser Pro Val Leu Glu Ala Val Trp Asp Pro Pro
            1040            1045            1050

Phe His Ser Gly Pro Pro Cys Cys Leu Gly Leu Val Pro Val Glu
            1055            1060            1065

Glu Val Asp Ser Pro Asp Ser Cys Gln Val Ser Gly Gly Asp Trp
            1070            1075            1080

Cys Pro Gln His Pro Val Gly Ala Tyr Val Gly Gln Glu Pro Gly
            1085            1090            1095

Met Gln Leu Ser Pro Gly Pro Leu Val Arg Val Ser Phe Glu Thr
            1100            1105            1110

Pro Pro Leu Thr Ile
            1115
```

<210> 59
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-25
<223> Synthetic construct.

<400> 59
 gggaaacaca gcagtcattg cctgc 25

<210> 60
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-24
<223> Synthetic construct.

<400> 60
 gcacacgtag cctgtcgctg gagc 24

<210> 61
<211> 42
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-42
<223> Synthetic construct.

<400> 61
 caccccaaag cccaggtccg gtacagcgtc aaacaagagt gg 42

<210> 62
<211> 1661
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 678
<223> unknown base

<400> 62
 cgggaggctg ggtcgtcatg atccggaccc cattgtcggc ctctgcccat 50

 cgcctgctcc tcccaggctc ccgcggccga cccccgcgca acatgcagcc 100

 cacgggccgc gagggttccc gcgcgctcag ccggcggtat ctgcggcgtc 150

 tgctgctcct gctactgctg ctgctgctgc ggcagcccgt aacccgcgcg 200

 gagaccacgc cgggcgcccc cagagccctc tccacgctgg gctcccccag 250

 cctcttcacc acgccgggtg tccccagcgc cctcactacc ccaggcctca 300

 ctacgccagg cacccccaaa accctggacc ttcggggtcg cgcgcaggcc 350

69

```
ctgatgcgga gtttcccact cgtggacggc cacaatgacc tgccccaggt 400

cctgagacag cgttacaaga atgtgcttca ggatgttaac ctgcgaaatt 450

tcagccatgg tcagaccagc ctggacaggc ttagagacgg cctcgtgggt 500

gcccagttct ggtcagcctc cgtctcatgc cagtcccagg accagactgc 550

cgtgcgcctc gccctggagc agattgacct cattcaccgc atgtgtgcct 600

cctactctga actcgagctt gtgacctcag ctgaaggtct gaacagctct 650

caaaagctgg cctgcctcat tggcgtgnag ggtggtcact cactggacag 700

cagcctctct gtgctgcgca gtttctatgt gctgggggtg cgctacctga 750

cacttacctt cacctgcagt acaccatggg cagagagttc caccaagttc 800

agacaccaca tgtacaccaa cgtcagcgga ttgacaagct tggtgagaa 850

agtagtagag gagttgaacc gcctgggcat gatgatagat ttgtcctatg 900

catcggacac cttgataaga agggtcctgg aagtgtctca ggctcctgtg 950

atcttctccc actcagctgc cagagctgtg tgtgacaatt tgttgaatgt 1000

tcccgatgat atcctgcagc ttctgaagaa cggtggcatc gtgatggtga 1050

cactgtccat gggggtgctg cagtgcaacc tgcttgctaa cgtgtccact 1100

gtggcagatc actttgacca catcagggca gtcattggat ctgagttcat 1150

cgggattggt ggaaattatg acgggactgg ccggttccct caggggctgg 1200

aggatgtgtc cacataccca gtcctgatag aggagttgct gagtcgtasc 1250

tggagcgagg aagagcttca aggtgtcctt cgtggaaacc tgctgcgggt 1300

cttcagacaa gtggaaaagg tgagagagga gagcagggcg cagagccccg 1350

tggaggctga gtttccatat gggcaactga gcacatcctg ccactcccac 1400

ctcgtgcctc agaatggaca ccaggctact catctggagg tgaccaagca 1450

gccaaccaat cgggtcccct ggaggtcctc aaatgcctcc ccataccttg 1500

ttccaggcct tgtggctgct gccaccatcc caaccttcac ccagtggctc 1550

tgctgacaca gtcggtcccc gcagaggtca ctgtggcaaa gcctcacaaa 1600

gccccctctc ctagttcatt cacaagcata tgctgagaat aaacatgtta 1650

cacatggaaa a 1661
```

<210> 63
<211> 487
<212> PRT
<213> Homo sapiens

70

<220>
<221> unsure
<222> 196, 386
<223> unknown amino acid

<400> 63
Met Gln Pro Thr Gly Arg Glu Gly Ser Arg Ala Leu Ser Arg Arg
  1   5   10   15

Tyr Leu Arg Arg Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Arg
                20   25   30

Gln Pro Val Thr Arg Ala Glu Thr Thr Pro Gly Ala Pro Arg Ala
                35   40   45

Leu Ser Thr Leu Gly Ser Pro Ser Leu Phe Thr Thr Pro Gly Val
                50   55   60

Pro Ser Ala Leu Thr Thr Pro Gly Leu Thr Thr Pro Gly Thr Pro
                65   70   75

Lys Thr Leu Asp Leu Arg Gly Arg Ala Gln Ala Leu Met Arg Ser
                80   85   90

Phe Pro Leu Val Asp Gly His Asn Asp Leu Pro Gln Val Leu Arg
                95   100   105

Gln Arg Tyr Lys Asn Val Leu Gln Asp Val Asn Leu Arg Asn Phe
                110   115   120

Ser His Gly Gln Thr Ser Leu Asp Arg Leu Arg Asp Gly Leu Val
                125   130   135

Gly Ala Gln Phe Trp Ser Ala Ser Val Ser Cys Gln Ser Gln Asp
                140   145   150

Gln Thr Ala Val Arg Leu Ala Leu Glu Gln Ile Asp Leu Ile His
                155   160   165

Arg Met Cys Ala Ser Tyr Ser Glu Leu Glu Leu Val Thr Ser Ala
                170   175   180

Glu Gly Leu Asn Ser Ser Gln Lys Leu Ala Cys Leu Ile Gly Val
                185   190   195

Xaa Gly Gly His Ser Leu Asp Ser Ser Leu Ser Val Leu Arg Ser
                200   205   210

Phe Tyr Val Leu Gly Val Arg Tyr Leu Thr Leu Thr Phe Thr Cys
                215   220   225

Ser Thr Pro Trp Ala Glu Ser Ser Thr Lys Phe Arg His His Met
                230   235   240

Tyr Thr Asn Val Ser Gly Leu Thr Ser Phe Gly Glu Lys Val Val
                245   250   255

Glu Glu Leu Asn Arg Leu Gly Met Met Ile Asp Leu Ser Tyr Ala

```
              260                    265                      270
Ser Asp Thr Leu Ile Arg Arg Val Leu Glu Val Ser Gln Ala Pro
              275                    280                      285
Val Ile Phe Ser His Ser Ala Ala Arg Ala Val Cys Asp Asn Leu
              290                    295                      300
Leu Asn Val Pro Asp Asp Ile Leu Gln Leu Leu Lys Asn Gly Gly
              305                    310                      315
Ile Val Met Val Thr Leu Ser Met Gly Val Leu Gln Cys Asn Leu
              320                    325                      330
Leu Ala Asn Val Ser Thr Val Ala Asp His Phe Asp His Ile Arg
              335                    340                      345
Ala Val Ile Gly Ser Glu Phe Ile Gly Ile Gly Gly Asn Tyr Asp
              350                    355                      360
Gly Thr Gly Arg Phe Pro Gln Gly Leu Glu Asp Val Ser Thr Tyr
              365                    370                      375
Pro Val Leu Ile Glu Glu Leu Leu Ser Arg Xaa Trp Ser Glu Glu
              380                    385                      390
Glu Leu Gln Gly Val Leu Arg Gly Asn Leu Leu Arg Val Phe Arg
              395                    400                      405
Gln Val Glu Lys Val Arg Glu Glu Ser Arg Ala Gln Ser Pro Val
              410                    415                      420
Glu Ala Glu Phe Pro Tyr Gly Gln Leu Ser Thr Ser Cys His Ser
              425                    430                      435
His Leu Val Pro Gln Asn Gly His Gln Ala Thr His Leu Glu Val
              440                    445                      450
Thr Lys Gln Pro Thr Asn Arg Val Pro Trp Arg Ser Ser Asn Ala
              455                    460                      465
Ser Pro Tyr Leu Val Pro Gly Leu Val Ala Ala Ala Thr Ile Pro
              470                    475                      480
Thr Phe Thr Gln Trp Leu Cys
              485
```

<210> 64
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-25
<223> Synthetic construct.

<400> 64

ccttcacctg cagtacacca tgggc 25

<210> 65
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-25
<223> Synthetic construct.

<400> 65
 gtcacacaca gctctggcag ctgag 25

<210> 66
<211> 47
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-47
<223> Synthetic construct.

<400> 66
 ccaagttcag acaccacatg tacaccaacg tcagcggatt gacaagc 47

<210> 67
<211> 1564
<212> DNA
<213> Homo sapiens

<400> 67
 tgctaggctc tgtcccacaa tgcacccgag agcaggagct gaaagcctct 50

 aacacccaca gatccctcta tgactgcaat gtgaggtgtc cggctttgct 100

 ggcccagcaa gcctgataag catgaagctc ttatctttgg tggctgtggt 150

 cgggtgtttg ctggtgcccc cagctgaagc caacaagagt tctgaagata 200

 tccggtgcaa atgcatctgt ccaccttata gaaacatcag tgggcacatt 250

 tacaaccaga atgtatccca gaaggactgc aactgcctgc acgtggtgga 300

 gcccatgcca gtgcctggcc atgacgtgga ggcctactgc ctgctgtgcg 350

 agtgcaggta cgaggagcgc agcaccacca ccatcaaggt catcattgtc 400

 atctacctgt ccgtggtggg tgccctgttg ctctacatgg ccttcctgat 450

 gctggtggac cctctgatcc gaaagccgga tgcatacact gagcaactgc 500

 acaatgagga ggagaatgag gatgctcgct ctatggcagc agctgctgca 550

 tccctcgggg gaccccgagc aaacacagtc ctggagcgtg tggaaggtgc 600

73

```
ccagcagcgg tggaagctgc aggtgcagga gcagcggaag acagtcttcg 650

atcggcacaa gatgctcagc tagatgggct ggtgtggttg ggtcaaggcc 700

ccaacaccat ggctgccagc ttccaggctg gacaaagcag ggggctactt 750

ctcccttccc tcggttccag tcttcccttt aaaagcctgt ggcatttttc 800

ctccttctcc ctaactttag aaatgttgta cttggctatt ttgattaggg 850

aagagggatg tggtctctga tctctgttgt cttcttgggt ctttggggtt 900

gaagggaggg ggaaggcagg ccagaaggga atggagacat tcgaggcggc 950

ctcaggagtg gatgcgatct gtctctcctg gctccactct tgccgccttc 1000

cagctctgag tcttgggaat gttgttaccc ttggaagata aagctgggtc 1050

ttcaggaact cagtgtctgg gaggaaagca tggcccagca ttcagcatgt 1100

gttcctttct gcagtggttc ttatcaccac ctccctccca gccccggcgc 1150

ctcagcccca gccccagctc cagccctgag gacagctctg atgggagagc 1200

tgggcccect gagcccactg ggtcttcagg gtgcactgga agctggtgtt 1250

cgctgtcccc tgtgcacttc tcgcactggg gcatggagtg cccatgcata 1300

ctctgctgcc ggtcccctca cctgcacttg aggggtctgg gcagtccctc 1350

ctctccccag tgtccacagt cactgagcca gacggtcggt tggaacatga 1400

gactcgaggc tgagcgtgga tctgaacacc acagcccctg tacttgggtt 1450

gcctcttgtc cctgaacttc gttgtaccag tgcatggaga gaaaattttg 1500

tcctcttgtc ttagagttgt gtgtaaatca aggaagccat cattaaattg 1550

ttttatttct ctca 1564
```

<210> 68
<211> 183
<212> PRT
<213> Homo sapiens

<400> 68

```
Met Lys Leu Leu Ser Leu Val Ala Val Val Gly Cys Leu Leu Val
 1               5                  10                  15

Pro Pro Ala Glu Ala Asn Lys Ser Ser Glu Asp Ile Arg Cys Lys
                20                  25                  30

Cys Ile Cys Pro Pro Tyr Arg Asn Ile Ser Gly His Ile Tyr Asn
                35                  40                  45

Gln Asn Val Ser Gln Lys Asp Cys Asn Cys Leu His Val Val Glu
                50                  55                  60
```

74

```
Pro Met Pro Val Pro Gly His Asp Val Glu Ala Tyr Cys Leu Leu
                65                  70                      75

Cys Glu Cys Arg Tyr Glu Glu Arg Ser Thr Thr Thr Ile Lys Val
                80                  85                      90

Ile Ile Val Ile Tyr Leu Ser Val Val Gly Ala Leu Leu Leu Tyr
                95                 100                     105

Met Ala Phe Leu Met Leu Val Asp Pro Leu Ile Arg Lys Pro Asp
               110                 115                     120

Ala Tyr Thr Glu Gln Leu His Asn Glu Glu Glu Asn Glu Asp Ala
               125                 130                     135

Arg Ser Met Ala Ala Ala Ala Ala Ser Leu Gly Gly Pro Arg Ala
               140                 145                     150

Asn Thr Val Leu Glu Arg Val Glu Gly Ala Gln Gln Arg Trp Lys
               155                 160                     165

Leu Gln Val Gln Glu Gln Arg Lys Thr Val Phe Asp Arg His Lys
               170                 175                     180

Met Leu Ser
```

<210> 69
<211> 3170
<212> DNA
<213> Homo sapiens

<400> 69
```
agcgggtctc gcttgggttc cgctaatttc tgtcctgagg cgtgagactg 50

agttcatagg gtcctgggtc cccgaaccag gaagggttga gggaacacaa 100

tctgcaagcc cccgcgaccc aagtgagggg ccccgtgttg gggtcctccc 150

tccctttgca ttcccacccc tccgggcttt gcgtcttcct ggggaccccc 200

tcgccgggag atggccgcgt tgatgcggag caaggattcg tcctgctgcc 250

tgctcctact ggccgcggtg ctgatggtgg agagctcaca gatcggcagt 300

tcgcgggcca aactcaactc catcaagtcc tctctgggcg gggagacgcc 350

tggtcaggcc gccaatcgat ctgcgggcat gtaccaagga ctggcattcg 400

gcggcagtaa gaagggcaaa aacctggggc aggcctaccc ttgtagcagt 450

gataaggagt gtgaagttgg gaggtattgc cacagtcccc accaaggatc 500

atcggcctgc atggtgtgtc ggagaaaaaa gaagcgctgc accgagatg 550

gcatgtgctg ccccagtacc cgctgcaata atggcatctg tatcccagtt 600

actgaaagca tcttaacccc tcacatcccg gctctggatg gtactcggca 650
```

```
cagagatcga aaccacggtc attactcaaa ccatgacttg ggatggcaga 700

atctaggaag accacacact aagatgtcac atataaaagg gcatgaagga 750

gacccctgcc tacgatcatc agactgcatt gaagggtttt gctgtgctcg 800

tcatttctgg accaaaatct gcaaccagt gctccatcag ggggaagtct 850

gtaccaaaca acgcaagaag ggttctcatg ggctggaaat tttccagcgt 900

tgcgactgtg cgaagggcct gtcttgcaaa gtatggaaag atgccaccta 950

ctcctccaaa gccagactcc atgtgtgtca gaaaatttga tcaccattga 1000

ggaacatcat caattgcaga ctgtgaagtt gtgtatttaa tgcattatag 1050

catggtggaa aataaggttc agatgcagaa gaatggctaa aataagaaac 1100

gtgataagaa tatagatgat cacaaaaagg gagaagaaa acatgaactg 1150

aatagattag aatgggtgac aaatgcagtg cagccagtgt ttccattatg 1200

caacttgtct atgtaaataa tgtacacatt tgtggaaaat gctattatta 1250

agagaacaag cacacagtgg aaattactga tgagtagcat gtgactttcc 1300

aagagtttag gttgtgctgg aggagaggtt tccttcagat tgctgattgc 1350

ttatacaaat aacctacatg ccagatttct attcaacgtt agagtttaac 1400

aaaatactcc tagaataact tgttatacaa taggttctaa aaataaaatt 1450

gctaaacaag aaatgaaaac atggagcatt gttaatttac aacagaaaat 1500

tacctttttga tttgtaacac tacttctgct gttcaatcaa gagtcttggt 1550

agataagaaa aaaatcagtc aatatttcca aataattgca aaataatggc 1600

cagttgttta ggaaggcctt taggaagaca aataaataac aaacaaacag 1650

ccacaaatac tttttttca aaattttagt tttacctgta attaataaga 1700

actgatacaa gacaaaaaca gttccttcag attctacgga atgacagtat 1750

atctctcttt atcctatgtg attcctgctc tgaatgcatt atattttcca 1800

aactataccc ataaattgtg actagtaaaa tacttacaca gagcagaatt 1850

ttcacagatg gcaaaaaaat ttaaagatgt ccaatatatg tgggaaaaga 1900

gctaacagag agatcattat ttcttaaaga ttggccataa cctatatttt 1950

gatagaatta gattggtaaa tacatgtatt catacatact ctgtggtaat 2000

agagacttaa gctggatctg tactgcactg gagtaagcaa gaaaattggg 2050

aaaacttttt cgtttgttca ggttttggca acacatagat catatgtctg 2100
```

76

```
aggcacaagt tggctgttca tctttgaaac caggggatgc acagtctaaa 2150

tgaatatctg catgggattt gctatcataa tatttactat gcagatgaat 2200

tcagtgtgag gtcctgtgtc cgtactatcc tcaaattatt tattttatag 2250

tgctgagatc ctcaaataat ctcaatttca ggaggtttca caaaatgtac 2300

tcctgaagta gacagagtag tgaggtttca ttgccctcta taagcttctg 2350

actagccaat ggcatcatcc aattttcttc ccaaacctct gcagcatctg 2400

ctttattgcc aaagggctag tttcggtttt ctgcagccat tgcggttaaa 2450

aaatataagt aggataactt gtaaaacctg catattgcta atctatagac 2500

accacagttt ctaaattctt tgaaaccact ttactacttt ttttaaactt 2550

aactcagttc taaatacttt gtctggagca caaaacaata aaaggttatc 2600

ttatagtcgt gactttaaac ttttgtagac cacaattcac tttttagttt 2650

tcttttactt aaatcccatc tgcagtctca aatttaagtt ctcccagtag 2700

agattgagtt tgagcctgta tatctattaa aaatttcaac ttcccacata 2750

tatttactaa gatgattaag acttacattt tctgcacagg tctgcaaaaa 2800

caaaaattat aaactagtcc atccaagaac caaagtttgt ataaacaggt 2850

tgctataagc ttgtgaaatg aaaatggaac atttcaatca aacatttcct 2900

atataacaat tattatattt acaatttggt ttctgcaata tttttcttat 2950

gtccaccctt ttaaaaatta ttatttgaag taatttattt acaggaaatg 3000

ttaatgagat gtattttctt atagagatat ttcttacaga aagctttgta 3050

gcagaatata tttgcagcta ttgactttgt aatttaggaa aaatgtataa 3100

taagataaaa tctattaaat ttttctcctc taaaaactga aaaaaaaaaa 3150

aaaaaaaaaa aaaaaaaaaa 3170
```

<210> 70
<211> 259
<212> PRT
<213> Homo sapiens

<400> 70

```
Met Ala Ala Leu Met Arg Ser Lys Asp Ser Ser Cys Cys Leu Leu
1               5                   10                  15

Leu Leu Ala Ala Val Leu Met Val Glu Ser Ser Gln Ile Gly Ser
                20                  25                  30

Ser Arg Ala Lys Leu Asn Ser Ile Lys Ser Ser Leu Gly Gly Glu
                35                  40                  45
```

77

```
Thr Pro Gly Gln Ala Ala Asn Arg Ser Ala Gly Met Tyr Gln Gly
            50              55                      60

Leu Ala Phe Gly Gly Ser Lys Lys Gly Lys Asn Leu Gly Gln Ala
            65              70                      75

Tyr Pro Cys Ser Ser Asp Lys Glu Cys Glu Val Gly Arg Tyr Cys
            80              85                      90

His Ser Pro His Gln Gly Ser Ser Ala Cys Met Val Cys Arg Arg
            95              100                     105

Lys Lys Lys Arg Cys His Arg Asp Gly Met Cys Cys Pro Ser Thr
            110             115                     120

Arg Cys Asn Asn Gly Ile Cys Ile Pro Val Thr Glu Ser Ile Leu
            125             130                     135

Thr Pro His Ile Pro Ala Leu Asp Gly Thr Arg His Arg Asp Arg
            140             145                     150

Asn His Gly His Tyr Ser Asn His Asp Leu Gly Trp Gln Asn Leu
            155             160                     165

Gly Arg Pro His Thr Lys Met Ser His Ile Lys Gly His Glu Gly
            170             175                     180

Asp Pro Cys Leu Arg Ser Ser Asp Cys Ile Glu Gly Phe Cys Cys
            185             190                     195

Ala Arg His Phe Trp Thr Lys Ile Cys Lys Pro Val Leu His Gln
            200             205                     210

Gly Glu Val Cys Thr Lys Gln Arg Lys Lys Gly Ser His Gly Leu
            215             220                     225

Glu Ile Phe Gln Arg Cys Asp Cys Ala Lys Gly Leu Ser Cys Lys
            230             235                     240

Val Trp Lys Asp Ala Thr Tyr Ser Ser Lys Ala Arg Leu His Val
            245             250                     255

Cys Gln Lys Ile
```

<210> 71
<211> 1809
<212> DNA
<213> Homo sapiens

<400> 71

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 tctcaatctg ctgacctcgt gatccgcctg accttgtaat ccacctacct 50

 tggcctccca aagtgttggg attacaggcg tgagccaccg cgcccggcca 100

 acatcacgtt tttaaaaatt gatttcttca aattcatggc aaatatttcc 150

 cttcccttta acttcttatg tcagaatgag gaaggatagc tgcatttatt 200
```

78

```
tagtcagttt tcattgcata gtaatatttt catgtagtat tttctaagtt 250

atattttagt aattcatatg ttttagatta taggttttaa catacttgtg 300

aaaatacttg atgtgtttta aagccttggg cagaaattct gtattgttga 350

ggatttgttc ttttatcccc cttttaaagt catccgtcct tggctcagga 400

tttggagagc ttgcaccacc aaaaatggca aacatcacca gctcccagat 450

tttggaccag ttgaaagctc cgagtttggg ccagtttacc accaccccaa 500

gtacacagca gaatagtaca agtcaccta caactactac ttcttgggac 550

ctcaagcccc caacatccca gtcctcagtc ctcagtcatc ttgacttcaa 600

atctcaacct gagccatccc cagttcttag ccagttgagc cagcgacaac 650

agcaccagag ccaggcagtc actgttcctc ctcctggttt ggagtccttt 700

ccttcccagg caaaacttcg agaatcaaca cctggagaca gtccctccac 750

tgtgaacaag cttttgcagc ttcccagcac gaccattgaa aatatctctg 800

tgtctgtcca ccagccacag cccaaacaca tcaaacttgc taagcggcgg 850

ataccccag cttctaagat cccagcttct gcagtggaaa tgcctggttc 900

agcagatgtc acaggattaa atgtgcagtt tggggctctg gaatttgggt 950

cagaaccttc tctctctgaa tttggatcag ctccaagcag tgaaaatagt 1000

aatcagattc ccatcagctt gtattcgaag tctttaagtg agcctttgaa 1050

tacatcttta tcaatgacca gtgcagtaca gaactccaca tatacaactt 1100

ccgtcattac ctcctgcagt ctgacaagct catcactgaa ttctgctagt 1150

ccagtagcaa tgtcttcctc ttatgaccag agttctgtgc ataacaggat 1200

cccataccaa agccctgtga gttcatcaga gtcagctcca ggaaccatca 1250

tgaatggaca tggtggtggt cgaagtcagc agacactaga cagtaagtat 1300

agcagcaagc tactcttgtc atggctggtg ccaaccaaac agaggaagag 1350

gatagctcac gtgatgtgga aaacaccagt tggtcaatgg ctcattcgtt 1400

aaaaagcagc ccttttgctt ttttgttttt ggaccaggtg ttggctgtgg 1450

tgttattaga aatgtcttaa ccacagcaag aaggaggtgg tggtctcata 1500

ttcttctgcc ctaatcagac tgcaccacaa gtgcagcata cagtatgcat 1550

tttaaagatg cttgggccag gcggggtggc tgatgcccat aatcccagtg 1600

ctttgggggg ccaaggcagg cagattgccc aagctcagga gtttgagacc 1650
```

79

accctgggca acatggtgaa actctgtctc tactaaaata cgaaaaacta 1700

gccgggtgtg gtggcggcgc gtgcctgtaa tcccagctac ttgggaggct 1750

gaggcacaag aatcgcttga gccagcttgg gctacaaagt gagactccgt 1800

ctgaaaaga 1809

<210> 72
<211> 363
<212> PRT
<213> Homo sapiens

<400> 72

```
Met Cys Phe Lys Ala Leu Gly Arg Asn Ser Val Leu Leu Arg Ile
 1               5                  10                  15

Cys Ser Phe Ile Pro Leu Leu Lys Ser Ser Val Leu Gly Ser Gly
                20                  25                  30

Phe Gly Glu Leu Ala Pro Pro Lys Met Ala Asn Ile Thr Ser Ser
                35                  40                  45

Gln Ile Leu Asp Gln Leu Lys Ala Pro Ser Leu Gly Gln Phe Thr
                50                  55                  60

Thr Thr Pro Ser Thr Gln Gln Asn Ser Thr Ser His Pro Thr Thr
                65                  70                  75

Thr Thr Ser Trp Asp Leu Lys Pro Pro Thr Ser Gln Ser Ser Val
                80                  85                  90

Leu Ser His Leu Asp Phe Lys Ser Gln Pro Glu Pro Ser Pro Val
                95                  100                 105

Leu Ser Gln Leu Ser Gln Arg Gln Gln His Gln Ser Gln Ala Val
                110                 115                 120

Thr Val Pro Pro Pro Gly Leu Glu Ser Phe Pro Ser Gln Ala Lys
                125                 130                 135

Leu Arg Glu Ser Thr Pro Gly Asp Ser Pro Ser Thr Val Asn Lys
                140                 145                 150

Leu Leu Gln Leu Pro Ser Thr Thr Ile Glu Asn Ile Ser Val Ser
                155                 160                 165

Val His Gln Pro Gln Pro Lys His Ile Lys Leu Ala Lys Arg Arg
                170                 175                 180

Ile Pro Pro Ala Ser Lys Ile Pro Ala Ser Ala Val Glu Met Pro
                185                 190                 195

Gly Ser Ala Asp Val Thr Gly Leu Asn Val Gln Phe Gly Ala Leu
                200                 205                 210

Glu Phe Gly Ser Glu Pro Ser Leu Ser Glu Phe Gly Ser Ala Pro
                215                 220                 225
```

80

```
Ser Ser Glu Asn Ser Asn Gln Ile Pro Ile Ser Leu Tyr Ser Lys
            230             235                 240

Ser Leu Ser Glu Pro Leu Asn Thr Ser Leu Ser Met Thr Ser Ala
            245             250                 255

Val Gln Asn Ser Thr Tyr Thr Thr Ser Val Ile Thr Ser Cys Ser
            260             265                 270

Leu Thr Ser Ser Ser Leu Asn Ser Ala Ser Pro Val Ala Met Ser
            275             280                 285

Ser Ser Tyr Asp Gln Ser Ser Val His Asn Arg Ile Pro Tyr Gln
            290             295                 300

Ser Pro Val Ser Ser Ser Glu Ser Ala Pro Gly Thr Ile Met Asn
            305             310                 315

Gly His Gly Gly Gly Arg Ser Gln Gln Thr Leu Asp Ser Lys Tyr
            320             325                 330

Ser Ser Lys Leu Leu Leu Ser Trp Leu Val Pro Thr Lys Gln Arg
            335             340                 345

Lys Arg Ile Ala His Val Met Trp Lys Thr Pro Val Gly Gln Trp
            350             355                 360

Leu Ile Arg
```

```
<210> 73
<211> 26
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-26
<223> Synthetic construct.

<400> 73
 aattcatggc aaatatttcc cttccc 26

<210> 74
<211> 22
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-22
<223> Synthetic construct.

<400> 74
 tggtaaactg gcccaaactc gg 22

<210> 75
<211> 50
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<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-50
<223> Synthetic construct

<400> 75
ttaaagtcat ccgtccttgg ctcaggattt ggagagcttg caccaccaaa 50

<210> 76
<211> 1989
<212> DNA
<213> Homo sapiens

<400> 76
gccgagtggg acaaagcctg gggctgggcg ggggccatgg cgctgccatc 50

ccgaatcctg ctttggaaac ttgtgcttct gcagagctct gctgttctcc 100

tgcactcagc ggtggaggag acggacgcgg ggctgtacac ctgcaacctg 150

caccatcact actgccacct ctacgagagc ctggccgtcc gcctggaggt 200

caccgacggc cccccggcca cccccgccta ctgggacggc gagaaggagg 250

tgctggcggt ggcgcgcggc gcaccgcgc ttctgacctg cgtgaaccgc 300

gggcacgtgt ggaccgaccg gcacgtggag gaggctcaac aggtggtgca 350

ctgggaccgg cagccgcccg gggtcccgca cgaccgcgcg gaccgcctgc 400

tggacctcta cgcgtcgggc gagcgccgcg cctacgggcc ccttttctg 450

cgcgaccgcg tggctgtggg cgcggatgcc tttgagcgcg gtgacttctc 500

actgcgtatc gagccgctgg aggtcgccga cgagggcacc tactcctgcc 550

acctgcacca ccattactgt ggcctgcacg aacgccgcgt cttccacctg 600

acggtcgccg aaccccacgc ggagccgccc ccccggggct ctccgggcaa 650

cggctccagc cacagcggcg ccccaggccc agaccccaca ctggcgcgcg 700

gccacaacgt catcaatgtc atcgtccccg agagccgagc ccacttcttc 750

cagcagctgg gctacgtgct ggccacgctg ctgctcttca tcctgctact 800

ggtcactgtc ctcctggccg cccgcaggcg ccgcggaggc tacgaatact 850

cggaccagaa gtcgggaaag tcaaagggga aggatgttaa cttggcggag 900

ttcgctgtgg ctgcagggga ccagatgctt tacaggagtg aggacatcca 950

gctagattac aaaaacaaca tcctgaagga gaggcggag ctggcccaca 1000

gccccctgcc tgccaagtac atcgacctag acaaagggtt ccggaaggag 1050

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aactgcaaat agggaggccc tgggctcctg gctgggccag cagctgcacc 1100

tctcctgtct gtgctcctcg gggcatctcc tgatgctccg gggctcaccc 1150

cccttccagc ggctggtccc gctttcctgg aatttggcct gggcgtatgc 1200

agaggccgcc tccacacccc tcccccaggg gcttggtggc agcatagccc 1250

ccacccctgc ggcctttgct cacgggtggc cctgcccacc cctggcacaa 1300

ccaaaatccc actgatgccc atcatgccct cagacccttc tgggctctgc 1350

ccgctggggg cctgaagaca ttcctggagg acactcccat cagaacctgg 1400

cagccccaaa actggggtca gcctcagggc aggagtccca ctcctccagg 1450

gctctgctcg tccggggctg ggagatgttc ctggaggagg acactcccat 1500

cagaacttgg cagccttgaa gttggggtca gcctcggcag gagtcccact 1550

cctcctgggg tgctgcctgc caccaagagc tcccccacct gtaccaccat 1600

gtgggactcc aggcaccatc tgttctcccc agggacctgc tgacttgaat 1650

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gatagtcact gggctccctg tgacttctga ccctgacacc cctcccttgg 1800

actctgcctg ggctggagtc tagggctggg gctacatttg gcttctgtac 1850

tggctgagga caggggaggg agtgaagttg gtttggggtg gcctgtgttg 1900

ccactctcag caccccacat ttgcatctgc tggtggacct gccaccatca 1950

caataaagtc cccatctgat ttttaaaaaa aaaaaaaaa 1989
```

<210> 77
<211> 341
<212> PRT
<213> Homo sapiens

<400> 77

```
 Met Ala Leu Pro Ser Arg Ile Leu Leu Trp Lys Leu Val Leu Leu
  1               5                  10                  15

 Gln Ser Ser Ala Val Leu Leu His Ser Ala Val Glu Glu Thr Asp
              20                  25                  30

 Ala Gly Leu Tyr Thr Cys Asn Leu His His His Tyr Cys His Leu
              35                  40                  45

 Tyr Glu Ser Leu Ala Val Arg Leu Glu Val Thr Asp Gly Pro Pro
              50                  55                  60

 Ala Thr Pro Ala Tyr Trp Asp Gly Glu Lys Glu Val Leu Ala Val
              65                  70                  75
```

83

Ala Arg Gly Ala Pro Ala Leu Leu Thr Cys Val Asn Arg Gly His
                80   85   90

Val Trp Thr Asp Arg His Val Glu Glu Ala Gln Gln Val Val His
                95   100   105

Trp Asp Arg Gln Pro Pro Gly Val Pro His Asp Arg Ala Asp Arg
                110   115   120

Leu Leu Asp Leu Tyr Ala Ser Gly Glu Arg Arg Ala Tyr Gly Pro
                125   130   135

Leu Phe Leu Arg Asp Arg Val Ala Val Gly Ala Asp Ala Phe Glu
                140   145   150

Arg Gly Asp Phe Ser Leu Arg Ile Glu Pro Leu Glu Val Ala Asp
                155   160   165

Glu Gly Thr Tyr Ser Cys His Leu His His Tyr Cys Gly Leu
                170   175   180

His Glu Arg Arg Val Phe His Leu Thr Val Ala Glu Pro His Ala
                185   190   195

Glu Pro Pro Pro Arg Gly Ser Pro Gly Asn Gly Ser Ser His Ser
                    200   205   210

Gly Ala Pro Gly Pro Asp Pro Thr Leu Ala Arg Gly His Asn Val
                215   220   225

Ile Asn Val Ile Val Pro Glu Ser Arg Ala His Phe Phe Gln Gln
                230   235   240

Leu Gly Tyr Val Leu Ala Thr Leu Leu Leu Phe Ile Leu Leu Leu
                245   250   255

Val Thr Val Leu Leu Ala Ala Arg Arg Arg Gly Gly Tyr Glu
                260   265   270

Tyr Ser Asp Gln Lys Ser Gly Lys Ser Lys Gly Lys Asp Val Asn
                275   280   285

Leu Ala Glu Phe Ala Val Ala Ala Gly Asp Gln Met Leu Tyr Arg
                290   295   300

Ser Glu Asp Ile Gln Leu Asp Tyr Lys Asn Asn Ile Leu Lys Glu
                305   310   315

Arg Ala Glu Leu Ala His Ser Pro Leu Pro Ala Lys Tyr Ile Asp
                320   325   330

Leu Asp Lys Gly Phe Arg Lys Glu Asn Cys Lys
                335   340

<210> 78
<211> 2243
<212> DNA
<213> Homo sapiens

84

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cgccggaggc agcggcggcg tggcgcagcg gcgacatggc cgttgtctca 50

gaggacgact ttcagcacag ttcaaactcc acctacggaa ccacaagcag 100

cagtctccga gctgaccagg aggcactgct tgagaagctg ctggaccgcc 150

cgccccctgg cctgcagagg cccgaggacc gcttctgtgg cacatacatc 200

atcttcttca gcctgggcat tggcagtcta ctgccatgga acttctttat 250

cactgccaag gagtactgga tgttcaaact ccgcaactcc tccagcccag 300

ccaccgggga ggaccctgag ggctcagaca tcctgaacta ctttgagagc 350

taccttgccg ttgcctccac cgtgccctcc atgctgtgcc tggtggccaa 400

cttcctgctt gtcaacaggg ttgcagtcca catccgtgtc ctggcctcac 450

tgacggtcat cctggccatc ttcatggtga taactgcact ggtgaaggtg 500

gacacttcct cctggacccg tggttttttt gcggtcacca ttgtctgcat 550

ggtgatcctc agcggtgcct ccactgtctt cagcagcagc atctacggca 600

tgaccggctc ctttcctatg aggaactccc aagcactgat atcaggagga 650

gccatgggcg ggacggtcag cgccgtggcc tcattggtgg acttggctgc 700

atccagtgat gtgaggaaca gcgccctggc cttcttcctg acggccacca 750

tcttcctcgt gctctgcatg ggactctacc tgctgctgtc caggctggag 800

tatgccaggt actacatgag gcctgttctt gcggcccatg tgttttctgg 850

tgaagaggag cttccccagg actccctcag tgcccccttcg gtggcctcca 900

gattcattga ttcccacaca ccccctctcc gccccatcct gaagaagacg 950

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aactttgctg acctatgtgg ccggcagctc accgcctgga tccaggtgcc 1150

agggcccaac agcaaggcgc tcccagggtt cgtgctcctc cggacctgcc 1200

tcatcccect cttcgtgctc tgtaactacc agccccgcgt ccacctgaag 1250

actgtggtct ccagtccga tgtgtacccc gcactcctca gctccctgct 1300

ggggctcagc aacggctacc tcagcaccct ggccctcctc tacgggccta 1350

agattgtgcc cagggagctg gctgaggcca cgggagtggt gatgtccttt 1400

tatgtgtgct tgggcttaac actgggctca gcctgctcta ccctcctggt 1450
```

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gcacctcatc tagaagggag gacacaagga cattggtgct tcagagcctt 1500

tgaagatgag aagagagtgc aggagggctg ggggccatgg aggaaaggcc 1550

taaagtttca cttggggaca gagagcagag cacactcggg cctcatccct 1600

cccaagatgc cagtgagcca cgtccatgcc cattccgtgc aaggcagata 1650

ttccagtcat attaacagaa cactcctgag acagttgaag aagaaatagc 1700

acaaatcagg ggtactccct tcacagctga tggttaacat tccaccttct 1750

ttctagccct tcaaagatgc tgccagtgtt cgccctagag ttattacaaa 1800

gccagtgcca aaacccagcc atgggctctt tgcaacctcc cagctgcgct 1850

cattccagct gacagcgaga tgcaagcaaa tgctcagctc tccttaccct 1900

gaaggggtct ccctggaatg gaagtcccct ggcatggtca gtcctcaggc 1950

ccaagactca agtgtgcaca gacccctgtg ttctgcgggt gaacaactgc 2000

ccactaacca gactggaaaa cccagaaaga tgggccttcc atgaatgctt 2050

cattccagag ggaccagagg gcctccctgt gcaagggatc aagcatgtct 2100

ggcctgggtt ttcaaaaaaa gagggatcct catgacctgg tggtctatgg 2150

cctgggtcaa gatgagggtc tttcagtgtt cctgtttaca acatgtcaaa 2200

gccattggtt caagggcgta ataaatactt gcgtattcaa aaa 2243
```

<210> 79
<211> 475
<212> PRT
<213> Homo sapiens

<400> 79

```
Met Ala Val Val Ser Glu Asp Asp Phe Gln His Ser Ser Asn Ser
 1               5                  10                  15

Thr Tyr Gly Thr Thr Ser Ser Ser Leu Arg Ala Asp Gln Glu Ala
                20                  25                  30

Leu Leu Glu Lys Leu Leu Asp Arg Pro Pro Pro Gly Leu Gln Arg
                35                  40                  45

Pro Glu Asp Arg Phe Cys Gly Thr Tyr Ile Ile Phe Phe Ser Leu
                50                  55                  60

Gly Ile Gly Ser Leu Leu Pro Trp Asn Phe Phe Ile Thr Ala Lys
                65                  70                  75

Glu Tyr Trp Met Phe Lys Leu Arg Asn Ser Ser Ser Pro Ala Thr
                80                  85                  90

Gly Glu Asp Pro Glu Gly Ser Asp Ile Leu Asn Tyr Phe Glu Ser
                95                  100                 105
```

86

```
Tyr Leu Ala Val Ala Ser Thr Val Pro Ser Met Leu Cys Leu Val
            110                 115                 120

Ala Asn Phe Leu Leu Val Asn Arg Val Ala Val His Ile Arg Val
            125                 130                 135

Leu Ala Ser Leu Thr Val Ile Leu Ala Ile Phe Met Val Ile Thr
            140                 145                 150

Ala Leu Val Lys Val Asp Thr Ser Ser Trp Thr Arg Gly Phe Phe
            155                 160                 165

Ala Val Thr Ile Val Cys Met Val Ile Leu Ser Gly Ala Ser Thr
            170                 175                 180

Val Phe Ser Ser Ser Ile Tyr Gly Met Thr Gly Ser Phe Pro Met
            185                 190                 195

Arg Asn Ser Gln Ala Leu Ile Ser Gly Gly Ala Met Gly Gly Thr
            200                 205                 210

Val Ser Ala Val Ala Ser Leu Val Asp Leu Ala Ala Ser Ser Asp
            215                 220                 225

Val Arg Asn Ser Ala Leu Ala Phe Phe Leu Thr Ala Thr Ile Phe
            230                 235                 240

Leu Val Leu Cys Met Gly Leu Tyr Leu Leu Leu Ser Arg Leu Glu
            245                 250                 255

Tyr Ala Arg Tyr Tyr Met Arg Pro Val Leu Ala Ala His Val Phe
            260                 265                 270

Ser Gly Glu Glu Glu Leu Pro Gln Asp Ser Leu Ser Ala Pro Ser
            275                 280                 285

Val Ala Ser Arg Phe Ile Asp Ser His Thr Pro Pro Leu Arg Pro
            290                 295                 300

Ile Leu Lys Lys Thr Ala Ser Leu Gly Phe Cys Val Thr Tyr Val
            305                 310                 315

Phe Phe Ile Thr Ser Leu Ile Tyr Pro Ala Val Cys Thr Asn Ile
            320                 325                 330

Glu Ser Leu Asn Lys Gly Ser Gly Ser Leu Trp Thr Thr Lys Phe
            335                 340                 345

Phe Ile Pro Leu Thr Thr Phe Leu Leu Tyr Asn Phe Ala Asp Leu
            350                 355                 360

Cys Gly Arg Gln Leu Thr Ala Trp Ile Gln Val Pro Gly Pro Asn
            365                 370                 375

Ser Lys Ala Leu Pro Gly Phe Val Leu Leu Arg Thr Cys Leu Ile
            380                 385                 390

Pro Leu Phe Val Leu Cys Asn Tyr Gln Pro Arg Val His Leu Lys
```

87

Thr Val Val Phe Gln Ser Asp Val Tyr Pro Ala Leu Leu Ser Ser
            410   415   420

Leu Leu Gly Leu Ser Asn Gly Tyr Leu Ser Thr Leu Ala Leu Leu
            425   430   435

Tyr Gly Pro Lys Ile Val Pro Arg Glu Leu Ala Glu Ala Thr Gly
            440   445   450

Val Val Met Ser Phe Tyr Val Cys Leu Gly Leu Thr Leu Gly Ser
            455   460   465

Ala Cys Ser Thr Leu Leu Val His Leu Ile
            470   475

<210> 80
<211> 22
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-22
<223> Synthetic construct.

<400> 80
 ttttgcggtc accattgtct gc 22

<210> 81
<211> 23
<212> DNA
<213> Homo sapiens

<220>
<221> Artificial sequence
<222> 1-23
<223> Synthetic construct.

<400> 81
 cgtaggtgac acagaagccc agg 23

<210> 82
<211> 49
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-49
<223> Synthetic construct.

<400> 82
 tacggcatga ccggctcctt tcctatgagg aactcccagg cactgatat 49

<210> 83
<211> 1844

<212> DNA
<213> Homo sapiens

<400> 83
 gacagtggag ggcagtggag aggaccgcgc tgtcctgctg tcaccaagag 50

 ctggagacac catctcccac cgagagtcat ggccccattg gccctgcacc 100

 tcctcgtcct cgtccccatc ctcctcagcc tggtggcctc ccaggactgg 150

 aaggctgaac gcagccaaga ccccttcgag aaatgcatgc aggatcctga 200

 ctatgagcag ctgctcaagg tggtgacctg ggggctcaat cggaccctga 250

 agccccagag ggtgattgtg gttggcgctg gtgtggccgg ctggtggcc 300

 gccaaggtgc tcagcgatgc tggacacaag gtcaccatcc tggaggcaga 350

 taacaggatc gggggccgca tcttcaccta ccgggaccag aacacgggct 400

 ggattgggga gctgggagcc atgcgcatgc ccagctctca caggatcctc 450

 cacaagctct gccagggcct ggggctcaac ctgaccaagt tcacccagta 500

 cgacaagaac acgtggacgg aggtgcacga agtgaagctg cgcaactatg 550

 tggtggagaa ggtgcccgag aagctgggct acgccttgcg tccccaggaa 600

 aagggccact cgcccgaaga catctaccag atggctctca accaggccct 650

 caaagacctc aaggcactgg gctgcagaaa ggcgatgaag aagtttgaaa 700

 ggcacacgct cttggaatat cttctcgggg aggggaacct gagccggccg 750

 gccgtgcagc ttctgggaga cgtgatgtcc gaggatggct tcttctatct 800

 cagcttcgcc gaggccctcc gggcccacag ctgcctcagc gacagactcc 850

 agtacagccg catcgtgggt ggctgggacc tgctgccgcg cgcgctgctg 900

 agctcgctgt ccgggcttgt gctgttgaac gcgccgtgg tggcgatgac 950

 ccagggaccg cacgatgtgc acgtgcagat cgagacctct cccccggcgc 1000

 ggaatctgaa ggtgctgaag gccgacgtgg tgctgctgac ggcgagcgga 1050

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 ggaggcgctg cggaggctgc actacgtgcc ggccaccaag gtgttcctaa 1150

 gcttccgcag gccttctgg cgcgaggagc acattgaagg cggccactca 1200

 aacaccgatc gcccgtcgcg catgattttc tacccgccgc cgcgcgaggg 1250

 cgcgctgctg ctggcctcgt acacgtggtc ggacgcggcg gcagcgttcg 1300

 ccggcttgag ccgggaagag gcgttgcgct tggcgctcga cgacgtggcg 1350

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gcattgcacg ggcctgtcgt gcgccagctc tgggacggca ccggcgtcgt 1400

caagcgttgg gcggaggacc agcacagcca gggtggcttt gtggtacagc 1450

cgccggcgct ctggcaaacc gaaaaggatg actggacggt cccttatggc 1500

cgcatctact ttgccggcga gcacaccgcc tacccgcacg gctgggtgga 1550

gacggcggtc aagtcggcgc tgcgcgccgc catcaagatc aacagccgga 1600

agggcctgc atcggacacg gccagccccg aggggcacgc atctgacatg 1650

gaggggcagg ggcatgtgca tggggtggcc agcagcccct cgcatgacct 1700

ggcaaaggaa gaaggcagcc accctccagt ccaaggccag ttatctctcc 1750

aaaacacgac ccacacgagg acctcgcatt aaagtatttt cggaaaaaaa 1800

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1844
```

<210> 84
<211> 567
<212> PRT
<213> Homo sapiens

<400> 84

```
Met Ala Pro Leu Ala Leu His Leu Leu Val Leu Val Pro Ile Leu
 1               5                  10                  15

Leu Ser Leu Val Ala Ser Gln Asp Trp Lys Ala Glu Arg Ser Gln
                20                  25                  30

Asp Pro Phe Glu Lys Cys Met Gln Asp Pro Asp Tyr Glu Gln Leu
                35                  40                  45

Leu Lys Val Val Thr Trp Gly Leu Asn Arg Thr Leu Lys Pro Gln
                50                  55                  60

Arg Val Ile Val Val Gly Ala Gly Val Ala Gly Leu Val Ala Ala
                65                  70                  75

Lys Val Leu Ser Asp Ala Gly His Lys Val Thr Ile Leu Glu Ala
                80                  85                  90

Asp Asn Arg Ile Gly Gly Arg Ile Phe Thr Tyr Arg Asp Gln Asn
                95                  100                 105

Thr Gly Trp Ile Gly Glu Leu Gly Ala Met Arg Met Pro Ser Ser
                110                 115                 120

His Arg Ile Leu His Lys Leu Cys Gln Gly Leu Gly Leu Asn Leu
                125                 130                 135

Thr Lys Phe Thr Gln Tyr Asp Lys Asn Thr Trp Thr Glu Val His
                140                 145                 150

Glu Val Lys Leu Arg Asn Tyr Val Val Glu Lys Val Pro Glu Lys
                155                 160                 165
```

90

```
Leu Gly Tyr Ala Leu Arg Pro Gln Glu Lys Gly His Ser Pro Glu
            170             175             180

Asp Ile Tyr Gln Met Ala Leu Asn Gln Ala Leu Lys Asp Leu Lys
            185             190             195

Ala Leu Gly Cys Arg Lys Ala Met Lys Lys Phe Glu Arg His Thr
            200             205             210

Leu Leu Glu Tyr Leu Leu Gly Glu Gly Asn Leu Ser Arg Pro Ala
            215             220             225

Val Gln Leu Leu Gly Asp Val Met Ser Glu Asp Gly Phe Phe Tyr
            230             235             240

Leu Ser Phe Ala Glu Ala Leu Arg Ala His Ser Cys Leu Ser Asp
            245             250             255

Arg Leu Gln Tyr Ser Arg Ile Val Gly Gly Trp Asp Leu Leu Pro
            260             265             270

Arg Ala Leu Leu Ser Ser Leu Ser Gly Leu Val Leu Leu Asn Ala
            275             280             285

Pro Val Val Ala Met Thr Gln Gly Pro His Asp Val His Val Gln
            290             295             300

Ile Glu Thr Ser Pro Pro Ala Arg Asn Leu Lys Val Leu Lys Ala
            305             310             315

Asp Val Val Leu Leu Thr Ala Ser Gly Pro Ala Val Lys Arg Ile
            320             325             330

Thr Phe Ser Pro Pro Leu Pro Arg His Met Gln Glu Ala Leu Arg
            335             340             345

Arg Leu His Tyr Val Pro Ala Thr Lys Val Phe Leu Ser Phe Arg
            350             355             360

Arg Pro Phe Trp Arg Glu Glu His Ile Glu Gly Gly His Ser Asn
            365             370             375

Thr Asp Arg Pro Ser Arg Met Ile Phe Tyr Pro Pro Pro Arg Glu
            380             385             390

Gly Ala Leu Leu Leu Ala Ser Tyr Thr Trp Ser Asp Ala Ala Ala
            395             400             405

Ala Phe Ala Gly Leu Ser Arg Glu Glu Ala Leu Arg Leu Ala Leu
            410             415             420

Asp Asp Val Ala Ala Leu His Gly Pro Val Val Arg Gln Leu Trp
            425             430             435

Asp Gly Thr Gly Val Val Lys Arg Trp Ala Glu Asp Gln His Ser
            440             445             450

Gln Gly Gly Phe Val Val Gln Pro Pro Ala Leu Trp Gln Thr Glu
```

```
                455                  460                  465
    Lys Asp Asp Trp Thr Val Pro Tyr Gly Arg Ile Tyr Phe Ala Gly
                    470                  475                  480
    Glu His Thr Ala Tyr Pro His Gly Trp Val Glu Thr Ala Val Lys
                    485                  490                  495
    Ser Ala Leu Arg Ala Ala Ile Lys Ile Asn Ser Arg Lys Gly Pro
                    500                  505                  510
    Ala Ser Asp Thr Ala Ser Pro Glu Gly His Ala Ser Asp Met Glu
                    515                  520                  525
    Gly Gln Gly His Val His Gly Val Ala Ser Ser Pro Ser His Asp
                    530                  535                  540
    Leu Ala Lys Glu Glu Gly Ser His Pro Pro Val Gln Gly Gln Leu
                    545                  550                  555
    Ser Leu Gln Asn Thr Thr His Thr Arg Thr Ser His
                    560                  565
```

<210> 85
<211> 3316
<212> DNA
<213> Homo sapiens

<400> 85

```
ctgacatggc ctgactcggg acagctcaga gcagggcaga actggggaca 50

ctctgggccg gccttctgcc tgcatggacg ctctgaagcc accctgtctc 100

tggaggaacc acgagcgagg gaagaaggac agggactcgt gtggcaggaa 150

gaactcagag ccgggaagcc cccattcact agaagcactg agagatgcgg 200

cccctcgca gggtctgaat ttcctgctgc tgttcacaaa gatgctttt 250

atctttaact ttttgttttc cccacttccg accccggcgt tgatctgcat 300

cctgacattt ggagctgcca tcttcttgtg gctgatcacc agacctcaac 350

ccgtcttacc tcttcttgac ctgaacaatc agtctgtggg aattgaggga 400

ggagcacgga agggggtttc ccagaagaac aatgacctaa caagttgctg 450

cttctcagat gccaagacta tgtatgaggt tttccaaaga ggactcgctg 500

tgtctgacaa tgggccctgc ttgggatata gaaaaccaaa ccagccctac 550

agatggctat cttacaaaca ggtgtctgat agagcagagt acctgggttc 600

ctgtctcttg cataaaggtt ataaatcatc accagaccag tttgtcggca 650

tctttgctca gaataggcca gagtggatca tctccgaatt ggcttgttac 700

acgtactcta tggtagctgt acctctgtat gacaccttgg gaccagaagc 750
```

92

```
catcgtacat attgtcaaca aggctgatat cgccatggtg atctgtgaca 800

cacccccaaaa ggcattggtg ctgatag gga atgtagagaa aggcttcacc 850

ccgagcctga aggtgatcat ccttatggac ccctttgatg atgacctgaa 900

gcaaagaggg gagaagagtg gaattgagat cttatcccta tatgatgctg 950

agaacctagg caaagagcac ttcagaaaac ctgtgcctcc tagcccagaa 1000

gacctgagcg tcatctgctt caccagtggg accacaggtg accccaaagg 1050

agccatgata acccatcaaa atattgtttc aaatgctgct gcctttctca 1100

aatgtgtgga gcatgcttat gagcccactc ctgatgatgt ggccatatcc 1150

tacctccctc tggctcatat gtttgagagg attgtacagg ctgttgtgta 1200

cagctgtgga gccagagttg gattcttcca aggggatatt cggttgctgg 1250

ctgacgacat gaagactttg aagcccacat tgtttcccgc ggtgcctcga 1300

ctccttaaca ggatctacga taaggtacaa aatgaggcca agacacccтt 1350

gaagaagttc ttgttgaagc tggctgtttc cagtaaattc aaagagcttc 1400

aaaagggtat catcaggcat gatagtttct gggacaagct catctttgca 1450

aagatccagg acagcctggg cggaagggtt cgtgtaattg tcactggagc 1500

tgcccccatg tccacttcag tcatgacatt cttccgggca gcaatgggat 1550

gtcaggtgta tgaagcttat ggtcaaacag aatgcacagg tggctgtaca 1600

tttacattac ctggggactg gacatcaggt cacgttgggg tgcccctggc 1650

ttgcaattac gtgaagctgg aagatgtggc tgacatgaac tactttacag 1700

tgaataatga aggagaggtc tgcatcaagg gtacaaacgt gttcaaagga 1750

tacctgaagg accctgagaa gacacaggaa gccctggaca gtgatggctg 1800

gcttcacaca ggagacattg gtcgctggct cccgaatgga actctgaaga 1850

tcatcgaccg taaaaagaac attttcaagc tggcccaagg agaatacatt 1900

gcaccagaga agatagaaaa tatctacaac aggagtcaac cagtgttaca 1950

aatttttgta cacgggagga gcttacggtc atccttagta ggagtggtgg 2000

ttcctgacac agatgtactt ccctcatttg cagccaagct tggggtgaag 2050

ggctcctttg aggaactgtg ccaaaaccaa gttgtaaggg aagccatttt 2100

agaagacttg cagaaaattg ggaaagaaag tggccttaaa acttttgaac 2150

aggtcaaagc cattttttctt catccagagc cattttccat tgaaaatggg 2200
```

93

```
ctcttgacac caacattgaa agcaaagcga ggagagcttt ccaaatactt 2250

tcggacccaa attgacagcc tgtatgagca catccaggat taggataagg 2300

tacttaagta cctgccggcc cactgtgcac tgcttgtgag aaaatggatt 2350

aaaaactatt cttacatttg ttttgccttt cctcctattt tttttttaacc 2400

tgttaaactc taaagccata gcttttgttt tatattgaga catataatgt 2450

gtaaacttag ttcccaaata aatcaatcct gtctttccca tcttcgatgt 2500

tgctaatatt aaggcttcag ggctactttt atcaacatgc ctgtcttcaa 2550

gatcccagtt tatgttctgt gtccttcctc atgatttcca accttaatac 2600

tattagtaac cacaagttca agggtcaaag ggaccctctg tgccttcttc 2650

tttgttttgt gataaacata acttgccaac agtctctatg cttatttaca 2700

tcttctactg ttcaaactaa gagattttta aattctgaaa aactgcttac 2750

aattcatgtt ttctagccac tccacaaacc actaaaattt tagtttttagc 2800

ctatcactca tgtcaatcat atctatgaga caaatgtctc cgatgctctt 2850

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atttcctaaa ctctctagtt agatatctga cttgggagta ttaaaaattg 2950

ggtctatgac atactgtcca aaaggaatgc tgttcttaaa gcattattta 3000

cagtaggaac tggggagtaa atctgttccc tacagtttgc tgctgagctg 3050

gaagctgtgg gggaaggagt tgacaggtgg gcccagtgaa cttttccagt 3100

aaatgaagca agcactgaat aaaaacctcc tgaactggga acaaagatct 3150

acaggcaagc aagatgccca cacaacaggc ttattttctg tgaaggaacc 3200

aactgatctc ccccacccct ggattagagt tcctgctcta ccttacccac 3250

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tattacagat aaaaaa 3316
```

<210> 86
<211> 739
<212> PRT
<213> Homo sapiens

<400> 86

```
Met Asp Ala Leu Lys Pro Pro Cys Leu Trp Arg Asn His Glu Arg
 1               5                  10                  15

Gly Lys Lys Asp Arg Asp Ser Cys Gly Arg Lys Asn Ser Glu Pro
                 20                  25                  30
```

94

```
Gly Ser Pro His Ser Leu Glu Ala Leu Arg Asp Ala Ala Pro Ser
            35              40                      45

Gln Gly Leu Asn Phe Leu Leu Leu Phe Thr Lys Met Leu Phe Ile
            50              55                      60

Phe Asn Phe Leu Phe Ser Pro Leu Pro Thr Pro Ala Leu Ile Cys
            65              70                      75

Ile Leu Thr Phe Gly Ala Ala Ile Phe Leu Trp Leu Ile Thr Arg
            80              85                      90

Pro Gln Pro Val Leu Pro Leu Leu Asp Leu Asn Asn Gln Ser Val
            95              100                     105

Gly Ile Glu Gly Gly Ala Arg Lys Gly Val Ser Gln Lys Asn Asn
            110             115                     120

Asp Leu Thr Ser Cys Cys Phe Ser Asp Ala Lys Thr Met Tyr Glu
            125             130                     135

Val Phe Gln Arg Gly Leu Ala Val Ser Asp Asn Gly Pro Cys Leu
            140             145                     150

Gly Tyr Arg Lys Pro Asn Gln Pro Tyr Arg Trp Leu Ser Tyr Lys
            155             160                     165

Gln Val Ser Asp Arg Ala Glu Tyr Leu Gly Ser Cys Leu Leu His
            170             175                     180

Lys Gly Tyr Lys Ser Ser Pro Asp Gln Phe Val Gly Ile Phe Ala
            185             190                     195

Gln Asn Arg Pro Glu Trp Ile Ile Ser Glu Leu Ala Cys Tyr Thr
            200             205                     210

Tyr Ser Met Val Ala Val Pro Leu Tyr Asp Thr Leu Gly Pro Glu
            215             220                     225

Ala Ile Val His Ile Val Asn Lys Ala Asp Ile Ala Met Val Ile
            230             235                     240

Cys Asp Thr Pro Gln Lys Ala Leu Val Leu Ile Gly Asn Val Glu
            245             250                     255

Lys Gly Phe Thr Pro Ser Leu Lys Val Ile Ile Leu Met Asp Pro
            260             265                     270

Phe Asp Asp Asp Leu Lys Gln Arg Gly Glu Lys Ser Gly Ile Glu
            275             280                     285

Ile Leu Ser Leu Tyr Asp Ala Glu Asn Leu Gly Lys Glu His Phe
            290             295                     300

Arg Lys Pro Val Pro Pro Ser Pro Glu Asp Leu Ser Val Ile Cys
            305             310                     315

Phe Thr Ser Gly Thr Thr Gly Asp Pro Lys Gly Ala Met Ile Thr
```

95

```
              320                    325                    330
His Gln Asn Ile Val Ser Asn Ala Ala Ala Phe Leu Lys Cys Val
              335                    340                    345
Glu His Ala Tyr Glu Pro Thr Pro Asp Asp Val Ala Ile Ser Tyr
              350                    355                    360
Leu Pro Leu Ala His Met Phe Glu Arg Ile Val Gln Ala Val Val
              365                    370                    375
Tyr Ser Cys Gly Ala Arg Val Gly Phe Phe Gln Gly Asp Ile Arg
              380                    385                    390
Leu Leu Ala Asp Asp Met Lys Thr Leu Lys Pro Thr Leu Phe Pro
              395                    400                    405
Ala Val Pro Arg Leu Leu Asn Arg Ile Tyr Asp Lys Val Gln Asn
              410                    415                    420
Glu Ala Lys Thr Pro Leu Lys Lys Phe Leu Leu Lys Leu Ala Val
              425                    430                    435
Ser Ser Lys Phe Lys Glu Leu Gln Lys Gly Ile Ile Arg His Asp
              440                    445                    450
Ser Phe Trp Asp Lys Leu Ile Phe Ala Lys Ile Gln Asp Ser Leu
              455                    460                    465
Gly Gly Arg Val Arg Val Ile Val Thr Gly Ala Ala Pro Met Ser
              470                    475                    480
Thr Ser Val Met Thr Phe Phe Arg Ala Ala Met Gly Cys Gln Val
              485                    490                    495
Tyr Glu Ala Tyr Gly Gln Thr Glu Cys Thr Gly Gly Cys Thr Phe
              500                    505                    510
Thr Leu Pro Gly Asp Trp Thr Ser Gly His Val Gly Val Pro Leu
              515                    520                    525
Ala Cys Asn Tyr Val Lys Leu Glu Asp Val Ala Asp Met Asn Tyr
              530                    535                    540
Phe Thr Val Asn Asn Glu Gly Glu Val Cys Ile Lys Gly Thr Asn
              545                    550                    555
Val Phe Lys Gly Tyr Leu Lys Asp Pro Glu Lys Thr Gln Glu Ala
              560                    565                    570
Leu Asp Ser Asp Gly Trp Leu His Thr Gly Asp Ile Gly Arg Trp
              575                    580                    585
Leu Pro Asn Gly Thr Leu Lys Ile Ile Asp Arg Lys Lys Asn Ile
              590                    595                    600
Phe Lys Leu Ala Gln Gly Glu Tyr Ile Ala Pro Glu Lys Ile Glu
              605                    610                    615
```

96

```
Asn Ile Tyr Asn Arg Ser Gln Pro Val Leu Gln Ile Phe Val His
            620             625             630

Gly Glu Ser Leu Arg Ser Ser Leu Val Gly Val Val Val Pro Asp
            635             640             645

Thr Asp Val Leu Pro Ser Phe Ala Ala Lys Leu Gly Val Lys Gly
            650             655             660

Ser Phe Glu Glu Leu Cys Gln Asn Gln Val Val Arg Glu Ala Ile
            665             670             675

Leu Glu Asp Leu Gln Lys Ile Gly Lys Glu Ser Gly Leu Lys Thr
            680             685             690

Phe Glu Gln Val Lys Ala Ile Phe Leu His Pro Glu Pro Phe Ser
            695             700             705

Ile Glu Asn Gly Leu Leu Thr Pro Thr Leu Lys Ala Lys Arg Gly
            710             715             720

Glu Leu Ser Lys Tyr Phe Arg Thr Gln Ile Asp Ser Leu Tyr Glu
            725             730             735

His Ile Gln Asp
```

<210> 87
<211> 2725
<212> DNA
<213> Homo sapiens

<400> 87

```
ggaggcggag gccgcggcga gccgggccga gcagtgaggg ccctagcggg 50

gcccgagcgg ggcccggggc ccctaagcca ttcctgaagt catgggctgg 100

ccaggacatt ggtgacccgc caatccggta tggacgactg gaagcccagc 150

cccctcatca agccctttgg ggctcggaag aagcggagct ggtaccttac 200

ctggaagtat aaactgacaa accagcgggc cctgcggaga ttctgtcaga 250

caggggccgt gcttttcctg ctggtgactg tcattgtcaa tatcaagttg 300

atcctggaca ctcggcgagc catcagtgaa gccaatgaag acccagagcc 350

agagcaagac tatgatgagg ccctaggccg cctggagccc ccacggcgca 400

gaggcagtgg tccccggcgg gtcctggacg tagaggtgta ttcaagtcgc 450

agcaaagtat atgtggcagt ggatggcacc acggtgctgg aggatgaggc 500

ccgggagcag ggccggggca tccatgtcat tgtcctcaac caggccacgg 550

gccacgtgat ggcaaaacgt gtgtttgaca cgtactcacc tcatgaggat 600

gaggccatgg tgctattcct caacatggta gcgcccggcc gagtgctcat 650
```

```
ctgcactgtc aaggatgagg gctccttcca cctcaaggac acagccaagg 700

ctctgctgag gagcctgggc agccaggctg gccctgccct gggctggagg 750

gacacatggg ccttcgtggg acgaaaagga ggtcctgtct tcggggagaa 800

acattctaag tcacctgccc tctcttcctg gggggaccca gtcctgctga 850

agacagatgt gccattgagc tcagcagaag aggcagagtg ccactgggca 900

gacacagagc tgaaccgtcg ccgccggcgc ttctgcagca aagttgaggg 950

ctatggaagt gtatgcagct gcaaggaccc cacacccatc gagttcagcc 1000

ctgacccact cccagacaac aaggtcctca atgtgcctgt ggctgtcatt 1050

gcagggaacc gacccaatta cctgtacagg atgctgcgct ctctgctttc 1100

agcccagggg gtgtctcctc agatgataac agttttcatt gacggctact 1150

atgaggaacc catggatgtg gtggcactgt ttggtctgag gggcatccag 1200

catactccca tcagcatcaa gaatgcccgc gtgtctcagc actacaaggc 1250

cagcctcact gccactttca acctgtttcc ggaggccaag tttgctgtgg 1300

ttctggaaga ggacctggac attgctgtgg attttttcag tttcctgagc 1350

caatccatcc acctactgga ggaggatgac agcctgtact gcatctctgc 1400

ctggaatgac caggggtatg aacacacggc tgaggaccca gcactactgt 1450

accgtgtgga gaccatgcct gggctgggct gggtgctcag gaggtccttg 1500

tacaaggagg agcttgagcc caagtggcct acaccggaaa agctctggga 1550

ttgggacatg tggatgcgga tgcctgaaca acgccggggc cgagagtgca 1600

tcatccctga cgtttcccga tcctaccact ttggcatcgt cggcctcaac 1650

atgaatggct actttcacga ggcctacttc aagaagcaca agttcaacac 1700

ggttccaggt gtccagctca ggaatgtgga cagtctgaag aaagaagctt 1750

atgaagtgga agttcacagg ctgctcagtg aggctgaggt tctggaccac 1800

agcaagaacc cttgtgaaga ctcttttcctg ccagacacag agggccacac 1850

ctacgtggcc tttattcgaa tggagaaaga tgatgacttc accacctgga 1900

cccagcttgc caagtgcctc catatctggg acctggatgt gcgtggcaac 1950

catcggggcc tgtggagatt gtttcggaag aagaaccact tcctggtggt 2000

ggggggtcccg gcttcccccct actcagtgaa gaagccaccc tcagtcaccc 2050

caattttcct ggagccaccc ccaaaggagg agggagcccc aggagcccca 2100
```

```
gaacagacat gagacctcct ccaggaccct gcggggctgg gtactgtgta 2150

cccccaggct ggctagccct tccctccatc ctgtaggatt ttgtagatgc 2200

tggtaggggc tggggctacc ttgttttttaa catgagactt aattactaac 2250

tccaaggggga gggttcccct gctccaacac cccgttcctg agttaaaagt 2300

ctatttattt acttccttgt tggagaaggg caggagagta cctgggaatc 2350

attacgatcc ctagcagctc atcctgccct ttgaataccc tcactttcca 2400

ggcctggctc agaatctaac ctatttattg actgtcctga gggccttgaa 2450

aacaggccga acctggaggg cctggatttc tttttgggct ggaatgctgc 2500

cctgagggtg gggctggctc ttactcagga aactgctgtg cccaacccat 2550

ggacaggccc agctggggcc cacatgctga cacagactca ctcagagacc 2600

cttagacact ggaccaggcc tcctctcagc cttctctttg tccagatttc 2650

caaagctgga taagttggtc attgattaaa aaaggagaag ccctctggga 2700

aaaaaaaaaa aaaaaaaaaa aaaaa 2725
```

<210> 88
<211> 660
<212> PRT
<213> Homo sapiens

<400> 88

```
Met Asp Asp Trp Lys Pro Ser Pro Leu Ile Lys Pro Phe Gly Ala
 1               5                  10                  15

Arg Lys Lys Arg Ser Trp Tyr Leu Thr Trp Lys Tyr Lys Leu Thr
                20                  25                  30

Asn Gln Arg Ala Leu Arg Arg Phe Cys Gln Thr Gly Ala Val Leu
                35                  40                  45

Phe Leu Leu Val Thr Val Ile Val Asn Ile Lys Leu Ile Leu Asp
                50                  55                  60

Thr Arg Arg Ala Ile Ser Glu Ala Asn Glu Asp Pro Glu Pro Glu
                65                  70                  75

Gln Asp Tyr Asp Glu Ala Leu Gly Arg Leu Glu Pro Pro Arg Arg
                80                  85                  90

Arg Gly Ser Gly Pro Arg Arg Val Leu Asp Val Glu Val Tyr Ser
                95                 100                 105

Ser Arg Ser Lys Val Tyr Val Ala Val Asp Gly Thr Thr Val Leu
               110                 115                 120

Glu Asp Glu Ala Arg Glu Gln Gly Arg Gly Ile His Val Ile Val
               125                 130                 135
```

```
Leu Asn Gln Ala Thr Gly His Val Met Ala Lys Arg Val Phe Asp
            140                 145                 150

Thr Tyr Ser Pro His Glu Asp Glu Ala Met Val Leu Phe Leu Asn
            155                 160                 165

Met Val Ala Pro Gly Arg Val Leu Ile Cys Thr Val Lys Asp Glu
            170                 175                 180

Gly Ser Phe His Leu Lys Asp Thr Ala Lys Ala Leu Leu Arg Ser
            185                 190                 195

Leu Gly Ser Gln Ala Gly Pro Ala Leu Gly Trp Arg Asp Thr Trp
            200                 205                 210

Ala Phe Val Gly Arg Lys Gly Gly Pro Val Phe Gly Glu Lys His
            215                 220                 225

Ser Lys Ser Pro Ala Leu Ser Ser Trp Gly Asp Pro Val Leu Leu
            230                 235                 240

Lys Thr Asp Val Pro Leu Ser Ser Ala Glu Glu Ala Glu Cys His
            245                 250                 255

Trp Ala Asp Thr Glu Leu Asn Arg Arg Arg Arg Arg Phe Cys Ser
            260        .        265                 270

Lys Val Glu Gly Tyr Gly Ser Val Cys Ser Cys Lys Asp Pro Thr
            275                 280                 285

Pro Ile Glu Phe Ser Pro Asp Pro Leu Pro Asp Asn Lys Val Leu
            290                 295                 300

Asn Val Pro Val Ala Val Ile Ala Gly Asn Arg Pro Asn Tyr Leu
            305                 310                 315

Tyr Arg Met Leu Arg Ser Leu Leu Ser Ala Gln Gly Val Ser Pro
            320        .        325                 330

Gln Met Ile Thr Val Phe Ile Asp Gly Tyr Tyr Glu Glu Pro Met
            335                 340                 345

Asp Val Val Ala Leu Phe Gly Leu Arg Gly Ile Gln His Thr Pro
            350                 355                 360

Ile Ser Ile Lys Asn Ala Arg Val Ser Gln His Tyr Lys Ala Ser
            365                 370                 375

Leu Thr Ala Thr Phe Asn Leu Phe Pro Glu Ala Lys Phe Ala Val
            380                 385                 390

Val Leu Glu Glu Asp Leu Asp Ile Ala Val Asp Phe Phe Ser Phe
            395                 400                 405

Leu Ser Gln Ser Ile His Leu Leu Glu Glu Asp Asp Ser Leu Tyr
            410                 415                 420

Cys Ile Ser Ala Trp Asn Asp Gln Gly Tyr Glu His Thr Ala Glu
```

100

```
                425                      430                      435
Asp Pro Ala Leu Leu Tyr Arg Val Glu Thr Met Pro Gly Leu Gly
            440                      445                      450

Trp Val Leu Arg Arg Ser Leu Tyr Lys Glu Glu Leu Glu Pro Lys
            455                      460                      465

Trp Pro Thr Pro Glu Lys Leu Trp Asp Trp Asp Met Trp Met Arg
            470                      475                      480

Met Pro Glu Gln Arg Arg Gly Arg Glu Cys Ile Ile Pro Asp Val
            485                      490                      495

Ser Arg Ser Tyr His Phe Gly Ile Val Gly Leu Asn Met Asn Gly
            500                      505                      510

Tyr Phe His Glu Ala Tyr Phe Lys Lys His Lys Phe Asn Thr Val
            515                      520                      525

Pro Gly Val Gln Leu Arg Asn Val Asp Ser Leu Lys Lys Glu Ala
            530                      535                      540

Tyr Glu Val Glu Val His Arg Leu Leu Ser Glu Ala Glu Val Leu
            545                      550                      555

Asp His Ser Lys Asn Pro Cys Glu Asp Ser Phe Leu Pro Asp Thr
            560                      565                      570

Glu Gly His Thr Tyr Val Ala Phe Ile Arg Met Glu Lys Asp Asp
            575                      580                      585

Asp Phe Thr Thr Trp Thr Gln Leu Ala Lys Cys Leu His Ile Trp
            590                      595                      600

Asp Leu Asp Val Arg Gly Asn His Arg Gly Leu Trp Arg Leu Phe
            605                      610                      615

Arg Lys Lys Asn His Phe Leu Val Val Gly Val Pro Ala Ser Pro
            620                      625                      630

Tyr Ser Val Lys Lys Pro Pro Ser Val Thr Pro Ile Phe Leu Glu
            635                      640                      645

Pro Pro Pro Lys Glu Glu Gly Ala Pro Gly Ala Pro Glu Gln Thr
            650                      655                      660
```

<210> 89
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-25
<223> Synthetic construct.

<400> 89

gatggcaaaa cgtgtgtttg acacg 25

<210> 90
<211> 22
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-22
<223> Synthetic construct.

<400> 90
 cctcaaccag gccacgggcc ac 22

<210> 91
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-24
<223> Synthetic construct.

<400> 91
 cccaggcaga gatgcagtac aggc 24

<210> 92
<211> 26
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-26
<223> Synthetic construct.

<400> 92
 cctccagtag gtggatggat tggctc 26

<210> 93
<211> 47
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-47
<223> Synthetic construct.

<400> 93
 ctcacctcat gaggatgagg ccatggtgct attcctcaac atggtag 47

<210> 94
<211> 3037
<212> DNA
<213> Homo sapiens

102

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cggacgcgtg ggctgctggt gggaaggcct aaagaactgg aaagcccact 50

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actggaaatt tgttgtctag tggttgtggg tgaataaagg agggcagaat 150

ggatgatttc atctccatta gcctgctgtc tctggctatg ttggtgggat 200

gttacgtggc cggaatcatt cccttggctg ttaatttctc agaggaacga 250

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agggaaaaca ccaccaagca agtgaaacac ataatgtgat tgcatcagac 400

aaagcagcag aaaaatcagt tgtccatgaa catgagcaca gccacgacca 450

cacacagctg catgcctata ttggtgtttc cctcgttctg ggcttcgttt 500

tcatgttgct ggtggaccag attggtaact cccatgtgca ttctactgac 550

gatccagaag cagcaaggtc tagcaattcc aaaatcacca ccacgctggg 600

tctggttgtc catgctgcag ctgatggtgt tgctttggga gcagcagcat 650

ctacttcaca gaccagtgtc cagttaattg tgtttgtggc aatcatgcta 700

cataaggcac cagctgcttt tggactggtt tccttcttga tgcatgctgg 750

cttagagcgg aatcgaatca gaaagcactt gctggtcttt gcattggcag 800

caccagttat gtccatggtg acatacttag gactgagtaa gagcagtaaa 850

gaagcccttt cagaggtgaa cgccacggga gtggccatgc ttttctctgc 900

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agggaagatg gaatttagtt ttaaggaaaa gaggagaact tcatactcac 1400

aatgaaatag tgattatgaa aatacagtgt tctgtaatta agctatgtct 1450
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gatggaaggt catagcaccc actcacttag atgctaaagg tgattctagt 1600

taatctggga ttagggtcag gaaaatgata gcaagacaca ttgaaagctc 1650

tctttatact caaaagagat atccattgaa aagggatgtc tagagggatt 1700

taaacagctc ctttggcacg tgcctctctg aatccagcct gccattccat 1750

caaatggagc aggagaggtg ggaggagctt ctaaagaggt gactggtatt 1800

ttgtagcatt ccttgtcaag ttctcctttg cagaatacct gtctccacat 1850

tcctagagag gagccaagtt ctagtagttt cagttctagg ctttccttca 1900

agaacagtca gatcacaaag tgtctttgga aattaaggga tattaaattt 1950

taagtgattt ttggatggtt attgatatct ttgtagtagc ttttttttaaa 2000

agactaccaa aatgtatggt tgtcctttttt ttttgttttt ttttttttta 2050

attatttctc ttagcagatc agcaatccct ctagggacct aaatactagg 2100

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gatcataaat gagaagtgtt tgcctattga tttaaagctt attggaatca 2200

tgtctcttgt ctcttcgtct tttctttgct tttcttctaa cttttccctc 2250

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ccctgtcttg tcaaataagt gtataatatt gtattattaa tttatttttta 2600

ctttctatac catttcaaaa cacattacac taaggggggaa ccaagactag 2650

tttcttcagg gcagtggacg tagtagtttg taaaaacgtt ttctatgacg 2700

cataagctag catgcctatg atttatttcc ttcatgaatt tgtcactgga 2750

tcagcagctg tggaaataaa gcttgtgagc cctctgctgg ccacagtgag 2800

gaaagtagca caaataggat acagttgtat gtagtcattg gcaacaattg 2850

catacaattt tactaccaag agaaggtata gtatggaaag tccaaatgac 2900
```

104

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ttccttgatt ggatgttaac agctgactgg tgtgagactt gaggtttcat 2950

ctagtccttc aaaactatat ggttgcctag attctctctg gaaactgact 3000

ttgtcaaata aatagcagat tgtagtgtca aaaaaaa 3037
```

<210> 95
<211> 307
<212> PRT
<213> Homo sapiens

<400> 95

```
Met Asp Asp Phe Ile Ser Ile Ser Leu Leu Ser Leu Ala Met Leu
  1               5                  10                  15

Val Gly Cys Tyr Val Ala Gly Ile Ile Pro Leu Ala Val Asn Phe
                 20                  25                  30

Ser Glu Glu Arg Leu Lys Leu Val Thr Val Leu Gly Ala Gly Leu
                 35                  40                  45

Leu Cys Gly Thr Ala Leu Ala Val Ile Val Pro Glu Gly Val His
                 50                  55                  60

Ala Leu Tyr Glu Asp Ile Leu Glu Gly Lys His His Gln Ala Ser
                 65                  70                  75

Glu Thr His Asn Val Ile Ala Ser Asp Lys Ala Ala Glu Lys Ser
                 80                  85                  90

Val Val His Glu His Glu His Ser His Asp His Thr Gln Leu His
                 95                 100                 105

Ala Tyr Ile Gly Val Ser Leu Val Leu Gly Phe Val Phe Met Leu
                110                 115                 120

Leu Val Asp Gln Ile Gly Asn Ser His Val His Ser Thr Asp Asp
                125                 130                 135

Pro Glu Ala Ala Arg Ser Ser Asn Ser Lys Ile Thr Thr Thr Leu
                140                 145                 150

Gly Leu Val Val His Ala Ala Ala Asp Gly Val Ala Leu Gly Ala
                155                 160                 165

Ala Ala Ser Thr Ser Gln Thr Ser Val Gln Leu Ile Val Phe Val
                170                 175                 180

Ala Ile Met Leu His Lys Ala Pro Ala Ala Phe Gly Leu Val Ser
                185                 190                 195

Phe Leu Met His Ala Gly Leu Glu Arg Asn Arg Ile Arg Lys His
                200                 205                 210

Leu Leu Val Phe Ala Leu Ala Ala Pro Val Met Ser Met Val Thr
                215                 220                 225

Tyr Leu Gly Leu Ser Lys Ser Ser Lys Glu Ala Leu Ser Glu Val
```

105

Asn Ala Thr Gly Val Ala Met Leu Phe Ser Ala Gly Thr Phe Leu
                245   250   255

Tyr Val Ala Thr Val His Val Leu Pro Glu Val Gly Gly Ile Gly
                260   265   270

His Ser His Lys Pro Asp Ala Thr Gly Gly Arg Gly Leu Ser Arg
                275   280   285

Leu Glu Val Ala Ala Leu Val Leu Gly Cys Leu Ile Pro Leu Ile
                290   295   300

Leu Ser Val Gly His Gln His
                305

<210> 96
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-25
<223> Synthetic construct.

<400> 96
 gttgtgggtg aataaaggag ggcag 25

<210> 97
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-25
<223> Synthetic construct.

<400> 97
 ctgtgctcat gttcatggac aactg 25

<210> 98
<211> 50
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-50
<223> Synthetic construct.

<400> 98
 ggatgatttc atctccatta gcctgctgtc tctggctatg ttggtgggat 50

<210> 99
<211> 1429

<212> DNA
<213> Homo sapiens

<400> 99
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 gctcgaggcc ggcggcggcg ggagagcgac ccgggcggcc tcgtagcggg 50

 gccccggatc cccgagtggc ggccggagcc tcgaaaagag attctcagcg 100

 ctgattttga gatgatgggc ttgggaaacg ggcgtcgcag catgaagtcg 150

 ccgcccctcg tgctggccgc cctggtggcc tgcatcatcg tcttgggctt 200

 caactactgg attgcgagct cccggagcgt ggacctccag acacggatca 250

 tggagctgga aggcagggtc cgcagggcgg ctgcagagag aggcgccgtg 300

 gagctgaaga agaacgagtt ccagggagag ctggagaagc agcgggagca 350

 gcttgacaaa atccagtcca gccacaactt ccagctggag agcgtcaaca 400

 agctgtacca ggacgaaaag gcggttttgg tgaataacat caccacaggt 450

 gagaggctca tccgagtgct gcaagaccag ttaaagaccc tgcagaggaa 500

 ttacggcagg ctgcagcagg atgtcctcca gtttcagaag aaccagacca 550

 acctggagag gaagttctcc tacgacctga gccagtgcat caatcagatg 600

 aaggaggtga aggaacagtg tgaggagcga atagaagagg tcaccaaaaa 650

 ggggaatgaa gctgtagctt ccagagacct gagtgaaaac aacgaccaga 700

 gacagcagct ccaagccctc agtgagcctc agcccaggct gcaggcagca 750

 ggcctgccac acacagaggt gccacaaggg aagggaaacg tgcttggtaa 800

 cagcaagtcc cagacaccag ccccccagttc cgaagtggtt ttggattcaa 850

 agagacaagt tgagaaagag gaaaccaatg agatccaggt ggtgaatgag 900

 gagcctcaga gggacaggct gccgcaggag ccaggccggg agcaggtggt 950

 ggaagacaga cctgtaggtg gaagaggctt cgggggagcc ggagaactgg 1000

 gccagacccc acaggtgcag gctgccctgt cagtgagcca ggaaaatcca 1050

 gagatggagg gccctgagcg agaccagctt gtcatccccg acggacagga 1100

 ggaggagcag gaagctgccg gggaagggag aaaccagcag aaactgagag 1150

 gagaagatga ctacaacatg gatgaaaatg aagcagaatc tgagacagac 1200

 aagcaagcag ccctggcagg gaatgacaga acatagatg tttttaatgt 1250

 tgaagatcag aaaagagaca ccataaattt acttgatcag cgtgaaaagc 1300

 ggaatcatac actctgaatt gaactggaat cacatatttc acaacagggc 1350
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107

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cgaagagatg actataaaat gttcatgagg gactgaatac tgaaaactgt 1400

gaaatgtact aaataaaatg tacatctga 1429
```

<210> 100
<211> 401
<212> PRT
<213> Homo sapiens

<400> 100

```
Met Met Gly Leu Gly Asn Gly Arg Arg Ser Met Lys Ser Pro Pro
 1               5                  10                  15

Leu Val Leu Ala Ala Leu Val Ala Cys Ile Ile Val Leu Gly Phe
                20                  25                  30

Asn Tyr Trp Ile Ala Ser Ser Arg Ser Val Asp Leu Gln Thr Arg
                35                  40                  45

Ile Met Glu Leu Glu Gly Arg Val Arg Arg Ala Ala Ala Glu Arg
                50                  55                  60

Gly Ala Val Glu Leu Lys Lys Asn Glu Phe Gln Gly Glu Leu Glu
                65                  70                  75

Lys Gln Arg Glu Gln Leu Asp Lys Ile Gln Ser Ser His Asn Phe
                80                  85                  90

Gln Leu Glu Ser Val Asn Lys Leu Tyr Gln Asp Glu Lys Ala Val
                95                  100                 105

Leu Val Asn Asn Ile Thr Thr Gly Glu Arg Leu Ile Arg Val Leu
                110                 115                 120

Gln Asp Gln Leu Lys Thr Leu Gln Arg Asn Tyr Gly Arg Leu Gln
                125                 130                 135

Gln Asp Val Leu Gln Phe Gln Lys Asn Gln Thr Asn Leu Glu Arg
                140                 145                 150

Lys Phe Ser Tyr Asp Leu Ser Gln Cys Ile Asn Gln Met Lys Glu
                155                 160                 165

Val Lys Glu Gln Cys Glu Glu Arg Ile Glu Glu Val Thr Lys Lys
                170                 175                 180

Gly Asn Glu Ala Val Ala Ser Arg Asp Leu Ser Glu Asn Asn Asp
                185                 190                 195

Gln Arg Gln Gln Leu Gln Ala Leu Ser Glu Pro Gln Pro Arg Leu
                200                 205                 210

Gln Ala Ala Gly Leu Pro His Thr Glu Val Pro Gln Gly Lys Gly
                215                 220                 225

Asn Val Leu Gly Asn Ser Lys Ser Gln Thr Pro Ala Pro Ser Ser
                230                 235                 240
```

```
Glu Val Val Leu Asp Ser Lys Arg Gln Val Glu Lys Glu Glu Thr
              245                 250             255

Asn Glu Ile Gln Val Val Asn Glu Glu Pro Gln Arg Asp Arg Leu
              260                 265             270

Pro Gln Glu Pro Gly Arg Glu Gln Val Val Glu Asp Arg Pro Val
              275                 280             285

Gly Gly Arg Gly Phe Gly Gly Ala Gly Glu Leu Gly Gln Thr Pro
              290                 295             300

Gln Val Gln Ala Ala Leu Ser Val Ser Gln Glu Asn Pro Glu Met
              305                 310             315

Glu Gly Pro Glu Arg Asp Gln Leu Val Ile Pro Asp Gly Gln Glu
              320                 325             330

Glu Glu Gln Glu Ala Ala Gly Glu Gly Arg Asn Gln Gln Lys Leu
              335                 340             345

Arg Gly Glu Asp Asp Tyr Asn Met Asp Glu Asn Glu Ala Glu Ser
              350                 355             360

Glu Thr Asp Lys Gln Ala Ala Leu Ala Gly Asn Asp Arg Asn Ile
              365                 370             375

Asp Val Phe Asn Val Glu Asp Gln Lys Arg Asp Thr Ile Asn Leu
              380                 385             390

Leu Asp Gln Arg Glu Lys Arg Asn His Thr Leu
              395                 400
```

<210> 101
<211> 3671
<212> DNA
<213> Homo sapiens

<400> 101
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 ttctacgctg gcattgccct cttcaccagt ggcttcctgc tcacccgttt 100

 ggagctcacc aaccatagca gctgccaaga gcccccaggc cctgggtccc 150

 tgccatgggg gagccaaggg aaacctgggg cctgctggat ggcttcccga 200

 ttttcgcggg ttgtgttggt gctgatagat gctctgcgat ttgacttcgc 250

 ccagccccag cattcacacg tgcctagaga gcctcctgtc tccctaccct 300

 tcctgggcaa actaagctcc ttgcagagga tcctggagat tcagccccac 350

 catgcccggc tctaccgatc tcaggttgac cctcctacca ccaccatgca 400

 gcgcctcaag gccctcacca ctggctcact gcctaccttt attgatgctg 450

 gtagtaactt cgccagccac gccatagtgg aagacaatct cattaagcag 500
```

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ctcaccagtg caggaaggcg tgtagtcttc atgggagatg atacctggaa 550

agacctttc  cctggtgctt tctccaaagc tttcttcttc ccatccttca 600

atgtcagaga cctagacaca gtggacaatg gcatcctgga acacctctac 650

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tggagaccat ggaggggaca gtgagctgga ggtctcagct gctctctttc 900

tgtatagccc cacagcagtc ttccccagca ccccaccaga ggagccagag 950

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gcccatccca tttgggaata tcggggaagt gatggctgag ctattctcag 1050

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gctagctggg ctttttcatc gttgccctga agagacacct gtttgccact 1950
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110

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cgtgcgcttg tggcttcgcc gctatggtaa tctcaagagc cccgagccac 2100

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tgatccctaa ctcctgattt ggatgcatct gagggacaag gggggcggtc 3500

tccgaagtgg aataaaatag gccgggcgtg gtgacttgca cctataatcc 3550

cagcactttg ggaggcagag gtgggaggat tgcttggtcc caggagttca 3600

agaccagcct gtggaacata acaagacccc gtctctacta tttaaaaaaa 3650

agtgtaataa aatgataata t 3671
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<210> 102
<211> 1089
<212> PRT
<213> Homo sapiens

<400> 102

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Met Gln Lys Ala Ser Val Leu Leu Phe Leu Ala Trp Val Cys Phe
  1               5                  10                  15

Leu Phe Tyr Ala Gly Ile Ala Leu Phe Thr Ser Gly Phe Leu Leu
                 20                  25                  30

Thr Arg Leu Glu Leu Thr Asn His Ser Ser Cys Gln Glu Pro Pro
                 35                  40                  45

Gly Pro Gly Ser Leu Pro Trp Gly Ser Gln Gly Lys Pro Gly Ala
                 50                  55                  60

Cys Trp Met Ala Ser Arg Phe Ser Arg Val Val Leu Val Leu Ile
                 65                  70                  75

Asp Ala Leu Arg Phe Asp Phe Ala Gln Pro Gln His Ser His Val
                 80                  85                  90

Pro Arg Glu Pro Pro Val Ser Leu Pro Phe Leu Gly Lys Leu Ser
                 95                 100                 105

Ser Leu Gln Arg Ile Leu Glu Ile Gln Pro His His Ala Arg Leu
                110                 115                 120

Tyr Arg Ser Gln Val Asp Pro Pro Thr Thr Thr Met Gln Arg Leu
                125                 130                 135

Lys Ala Leu Thr Thr Gly Ser Leu Pro Thr Phe Ile Asp Ala Gly
                140                 145                 150

Ser Asn Phe Ala Ser His Ala Ile Val Glu Asp Asn Leu Ile Lys
                155                 160                 165

Gln Leu Thr Ser Ala Gly Arg Arg Val Val Phe Met Gly Asp Asp
                170                 175                 180

Thr Trp Lys Asp Leu Phe Pro Gly Ala Phe Ser Lys Ala Phe Phe
                185                 190                 195

Phe Pro Ser Phe Asn Val Arg Asp Leu Asp Thr Val Asp Asn Gly
```

112

```
          200                      205                      210
Ile Leu Glu His Leu Tyr Pro Thr Met Asp Ser Gly Glu Trp Asp
              215                      220                      225
Val Leu Ile Ala His Phe Leu Gly Val Asp His Cys Gly His Lys
              230                      235                      240
His Gly Pro His His Pro Glu Met Ala Lys Lys Leu Ser Gln Met
              245                      250                      255
Asp Gln Val Ile Gln Gly Leu Val Glu Arg Leu Glu Asn Asp Thr
              260                      265                      270
Leu Leu Val Val Ala Gly Asp His Gly Met Thr Thr Asn Gly Asp
              275                      280                      285
His Gly Gly Asp Ser Glu Leu Glu Val Ser Ala Ala Leu Phe Leu
              290                      295                      300
Tyr Ser Pro Thr Ala Val Phe Pro Ser Thr Pro Pro Glu Glu Pro
              305                      310                      315
Glu Val Ile Pro Gln Val Ser Leu Val Pro Thr Leu Ala Leu Leu
              320                      325                      330
Leu Gly Leu Pro Ile Pro Phe Gly Asn Ile Gly Glu Val Met Ala
              335                      340                      345
Glu Leu Phe Ser Gly Gly Glu Asp Ser Gln Pro His Ser Ser Ala
              350                      355                      360
Leu Ala Gln Ala Ser Ala Leu His Leu Asn Ala Gln Gln Val Ser
              365                      370                      375
Arg Phe Leu His Thr Tyr Ser Ala Ala Thr Gln Asp Leu Gln Ala
              380                      385                      390
Lys Glu Leu His Gln Leu Gln Asn Leu Phe Ser Lys Ala Ser Ala
              395                      400                      405
Asp Tyr Gln Trp Leu Leu Gln Ser Pro Lys Gly Ala Glu Ala Thr
              410                      415                      420
Leu Pro Thr Val Ile Ala Glu Leu Gln Gln Phe Leu Arg Gly Ala
              425                      430                      435
Arg Ala Met Cys Ile Glu Ser Trp Ala Arg Phe Ser Leu Val Arg
              440                      445                      450
Met Ala Gly Gly Thr Ala Leu Leu Ala Ala Ser Cys Phe Ile Cys
              455                      460                      465
Leu Leu Ala Ser Gln Trp Ala Ile Ser Pro Gly Phe Pro Phe Cys
              470                      475                      480
Pro Leu Leu Leu Thr Pro Val Ala Trp Gly Leu Val Gly Ala Ile
              485                      490                      495
```

113

```
Ala Tyr Ala Gly Leu Leu Gly Thr Ile Glu Leu Lys Leu Asp Leu
              500                 505                 510

Val Leu Leu Gly Ala Val Ala Ala Val Ser Ser Phe Leu Pro Phe
              515                 520                 525

Leu Trp Lys Ala Trp Ala Gly Trp Gly Ser Lys Arg Pro Leu Ala
              530                 535                 540

Thr Leu Phe Pro Ile Pro Gly Pro Val Leu Leu Leu Leu Leu Phe
              545                 550                 555

Arg Leu Ala Val Phe Phe Ser Asp Ser Phe Val Val Ala Glu Ala
              560                 565                 570

Arg Ala Thr Pro Phe Leu Leu Gly Ser Phe Ile Leu Leu Leu Val
              575                 580                 585

Val Gln Leu His Trp Glu Gly Gln Leu Leu Pro Pro Lys Leu Leu
              590                 595                 600

Thr Met Pro Arg Leu Gly Thr Ser Ala Thr Thr Asn Pro Pro Arg
              605                 610                 615

His Asn Gly Ala Tyr Ala Leu Arg Leu Gly Ile Gly Leu Leu Leu
              620                 625                 630

Cys Thr Arg Leu Ala Gly Leu Phe His Arg Cys Pro Glu Glu Thr
              635                 640                 645

Pro Val Cys His Ser Ser Pro Trp Leu Ser Pro Leu Ala Ser Met
                  650                 655                 660

Val Gly Gly Arg Ala Lys Asn Leu Trp Tyr Gly Ala Cys Val Ala
              665                 670                 675

Ala Leu Val Ala Leu Leu Ala Ala Val Arg Leu Trp Leu Arg Arg
              680                 685                 690

Tyr Gly Asn Leu Lys Ser Pro Glu Pro Pro Met Leu Phe Val Arg
              695                 700                 705

Trp Gly Leu Pro Leu Met Ala Leu Gly Thr Ala Ala Tyr Trp Ala
              710                 715                 720

Leu Ala Ser Gly Ala Asp Glu Ala Pro Pro Arg Leu Arg Val Leu
              725                 730                 735

Val Ser Gly Ala Ser Met Val Leu Pro Arg Ala Val Ala Gly Leu
              740                 745                 750

Ala Ala Ser Gly Leu Ala Leu Leu Leu Trp Lys Pro Val Thr Val
              755                 760                 765

Leu Val Lys Ala Gly Ala Gly Ala Pro Arg Thr Arg Thr Val Leu
              770                 775                 780

Thr Pro Phe Ser Gly Pro Pro Thr Ser Gln Ala Asp Leu Asp Tyr
```

114

```
            785                    790                    795
Val Val Pro Gln Ile Tyr Arg His Met Gln Glu Glu Phe Arg Gly
            800                    805                    810

Arg Leu Glu Arg Thr Lys Ser Gln Gly Pro Leu Thr Val Ala Ala
            815                    820                    825

Tyr Gln Leu Gly Ser Val Tyr Ser Ala Ala Met Val Thr Ala Leu
            830                    835                    840

Thr Leu Leu Ala Phe Pro Leu Leu Leu His Ala Glu Arg Ile
            845                    850                    855

Ser Leu Val Phe Leu Leu Leu Phe Leu Gln Ser Phe Leu Leu Leu
            860                    865                    870

His Leu Leu Ala Ala Gly Ile Pro Val Thr Thr Pro Gly Pro Phe
            875                    880                    885

Thr Val Pro Trp Gln Ala Val Ser Ala Trp Ala Leu Met Ala Thr
            890                    895                    900

Gln Thr Phe Tyr Ser Thr Gly His Gln Pro Val Phe Pro Ala Ile
            905                    910                    915

His Trp His Ala Ala Phe Val Gly Phe Pro Glu Gly His Gly Ser
            920                    925                    930

Cys Thr Trp Leu Pro Ala Leu Leu Val Gly Ala Asn Thr Phe Ala
            935                    940                    945

Ser His Leu Leu Phe Ala Val Gly Cys Pro Leu Leu Leu Leu Trp
            950                    955                    960

Pro Phe Leu Cys Glu Ser Gln Gly Leu Arg Lys Arg Gln Gln Pro
            965                    970                    975

Pro Gly Asn Glu Ala Asp Ala Arg Val Arg Pro Glu Glu Glu Glu
            980                    985                    990

Glu Pro Leu Met Glu Met Arg Leu Arg Asp Ala Pro Gln His Phe
            995                    1000                   1005

Tyr Ala Ala Leu Leu Gln Leu Gly Leu Lys Tyr Leu Phe Ile Leu
            1010                   1015                   1020

Gly Ile Gln Ile Leu Ala Cys Ala Leu Ala Ala Ser Ile Leu Arg
            1025                   1030                   1035

Arg His Leu Met Val Trp Lys Val Phe Ala Pro Lys Phe Ile Phe
            1040                   1045                   1050

Glu Ala Val Gly Phe Ile Val Ser Ser Val Gly Leu Leu Leu Gly
            1055                   1060                   1065

Ile Ala Leu Val Met Arg Val Asp Gly Ala Val Ser Ser Trp Phe
            1070                   1075                   1080
```

115

Arg Gln Leu Phe Leu Ala Gln Gln Arg
              1085

<210> 103
<211> 1743
<212> DNA
<213> Homo sapiens

<400> 103

```
tgccgctgcc gccgctgctg ctgttgctcc tggcggcgcc ttggggacgg 50

gcagttccct gtgtctctgg tggtttgcct aaacctgcaa acatcacctt 100

cttatccatc aacatgaaga atgtcctaca atggactcca ccagagggtc 150

ttcaaggagt taaagttact tacactgtgc agtatttcat cacaaattgg 200

cccaccagag gtggcactga ctacagatga gaagtccatt tctgttgtcc 250

tgacagctcc agagaagtgg aagagaaatc cagaagacct tcctgtttcc 300

atgcaacaaa tatactccaa tctgaagtat aacgtgtctg tgttgaatac 350

taaatcaaac agaacgtggt cccagtgtgt gaccaaccac acgctggtgc 400

tcacctggct ggagccgaac actctttact gcgtacacgt ggagtccttc 450

gtcccagggc cccctcgccg tgctcagcct tctgagaagc agtgtgccag 500

gactttgaaa gatcaatcat cagagttcaa ggctaaaatc atcttctggt 550

atgttttgcc catatctatt accgtgtttc ttttttctgt gatgggctat 600

tccatctacc gatatatcca cgttggcaaa gagaaacacc cagcaaattt 650

gattttgatt tatggaaatg aatttgacaa aagattcttt gtgcctgctg 700

aaaaaatcgt gattaacttt atcaccctca atatctcgga tgattctaaa 750

atttctcatc aggatatgag tttactggga aaaagcagtg atgtatccag 800

ccttaatgat cctcagccca gcgggaacct gaggccccct caggaggaag 850

aggaggtgaa acatttaggg tatgcttcgc atttgatgga aattttttgt 900

gactctgaag aaaacacgga aggtacttct ctcacccagc aagagtccct 950

cagcagaaca ataccccctgg ataaaacagt cattgaatat gaatatgatg 1000

tcagaaccac tgacatttgt gcggggcctg aagagcagga gctcagtttg 1050

caggaggagg tgtccacaca aggaacatta ttggagtcgc aggcagcgtt 1100

ggcagtcttg gcccgcaaa cgttacagta ctcatacacc cctcagctcc 1150

aagacttaga ccccctggcg caggagcaca cagactcgga ggaggggccg 1200

gaggaagagc catcgacgac cctggtcgac tgggatcccc aaactggcag 1250
```

```
gctgtgtatt ccttcgctgt ccagcttcga ccaggattca gagggctgcg 1300

agccttctga gggggatggg ctcggagagg agggtcttct atctagactc 1350

tatgaggagc cggctccaga caggccacca ggagaaaatg aaacctatct 1400

catgcaattc atggaggaat gggggttata tgtgcagatg gaaaactgat 1450

gccaacactt ccttttgcct tttgtttcct gtgcaaacaa gtgagtcacc 1500

cctttgatcc cagccataaa gtacctggga tgaaagaagt tttttccagt 1550

ttgtcagtgt ctgtgagaat tacttatttc ttttctctat tctcatagca 1600

cgtgtgtgat tggttcatgc atgtaggtct cttaacaatg atggtgggcc 1650

tctggagtcc aggggctggc cggttgttct atgcagagaa agcagtcaat 1700

aaatgtttgc cagactgggt gcagaattta ttcaggtggg tgt 1743
```

<210> 104
<211> 442
<212> PRT
<213> Homo sapiens

<400> 104

```
Met Ser Tyr Asn Gly Leu His Gln Arg Val Phe Lys Glu Leu Lys
 1               5                  10                  15

Leu Leu Thr Leu Cys Ser Ile Ser Ser Gln Ile Gly Pro Pro Glu
                20                  25                  30

Val Ala Leu Thr Thr Asp Glu Lys Ser Ile Ser Val Val Leu Thr
                35                  40                  45

Ala Pro Glu Lys Trp Lys Arg Asn Pro Glu Asp Leu Pro Val Ser
                50                  55                  60

Met Gln Gln Ile Tyr Ser Asn Leu Lys Tyr Asn Val Ser Val Leu
                65                  70                  75

Asn Thr Lys Ser Asn Arg Thr Trp Ser Gln Cys Val Thr Asn His
                80                  85                  90

Thr Leu Val Leu Thr Trp Leu Glu Pro Asn Thr Leu Tyr Cys Val
                95                  100                 105

His Val Glu Ser Phe Val Pro Gly Pro Pro Arg Arg Ala Gln Pro
                110                 115                 120

Ser Glu Lys Gln Cys Ala Arg Thr Leu Lys Asp Gln Ser Ser Glu
                125                 130                 135

Phe Lys Ala Lys Ile Ile Phe Trp Tyr Val Leu Pro Ile Ser Ile
                140                 145                 150

Thr Val Phe Leu Phe Ser Val Met Gly Tyr Ser Ile Tyr Arg Tyr
                155                 160                 165
```

117

```
Ile His Val Gly Lys Glu Lys His Pro Ala Asn Leu Ile Leu Ile
            170             175                         180

Tyr Gly Asn Glu Phe Asp Lys Arg Phe Phe Val Pro Ala Glu Lys
            185             190                         195

Ile Val Ile Asn Phe Ile Thr Leu Asn Ile Ser Asp Asp Ser Lys
            200             · 205                       210

Ile Ser His Gln Asp Met Ser Leu Leu Gly Lys Ser Ser Asp Val
            215             220                         225

Ser Ser Leu Asn Asp Pro Gln Pro Ser Gly Asn Leu Arg Pro Pro
            230             235                         240

Gln Glu Glu Glu Glu Val Lys His Leu Gly Tyr Ala Ser His Leu
            245             250                         255

Met Glu Ile Phe Cys Asp Ser Glu Glu Asn Thr Glu Gly Thr Ser
            260             265                         270

Leu Thr Gln Gln Glu Ser Leu Ser Arg Thr Ile Pro Pro Asp Lys
            275             280                         285

Thr Val Ile Glu Tyr Glu Tyr Asp Val Arg Thr Thr Asp Ile Cys
            290             295                         300

Ala Gly Pro Glu Glu Gln Glu Leu Ser Leu Gln Glu Glu Val Ser
            305             310                         315

Thr Gln Gly Thr Leu Leu Glu Ser Gln Ala Ala Leu Ala Val Leu
            320             325                         330

Gly Pro Gln Thr Leu Gln Tyr Ser Tyr Thr Pro Gln Leu Gln Asp
            335             340                         345

Leu Asp Pro Leu Ala Gln Glu His Thr Asp Ser Glu Glu Gly Pro
            350             355                         360

Glu Glu Glu Pro Ser Thr Thr Leu Val Asp Trp Asp Pro Gln Thr
            365             370                         375

Gly Arg Leu Cys Ile Pro Ser Leu Ser Ser Phe Asp Gln Asp Ser
            380             385                         390

Glu Gly Cys Glu Pro Ser Glu Gly Asp Gly Leu Gly Glu Glu Gly
            395             400                         405

Leu Leu Ser Arg Leu Tyr Glu Glu Pro Ala Pro Asp Arg Pro Pro
            410             415                         420

Gly Glu Asn Glu Thr Tyr Leu Met Gln Phe Met Glu Glu Trp Gly
            425             430                         435

Leu Tyr Val Gln Met Glu Asn
            440
```

<210> 105

<211> 21
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-21
<223> Synthetic construct

<400> 105
cgctgctgct gttgctcctg g 21

<210> 106
<211> 18
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 106
cagtgtgcca ggactttg 18

<210> 107
<211> 18
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 107
agtcgcaggc agcgttgg 18

<210> 108
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-25
<223> Synthetic construct.

<400> 108
ctcctccgag tctgtgtgct cctgc 25

<210> 109
<211> 51
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence

<222> 1-51
<223> Synthetic construct.

<400> 109
ggacgggcag ttccctgtgt ctctggtggt ttgcctaaac ctgcaaacat 50

c 51

<210> 110
<211> 1114
<212> DNA
<213> Homo sapiens

<400> 110
cggacgcgtg ggcggacgcg tgggcggacg cgtgggtctc tgcggggaga 50

cgccagcctg cgtctgccat ggggctcggg ttgaggggct ggggacgtcc 100

tctgctgact gtggccaccg ccctgatgct gcccgtgaag ccccccgcag 150

gctcctgggg ggcccagatc atcggggggcc acgaggtgac cccccactcc 200

aggccctaca tggcatccgt gcgcttcggg ggccaacatc actgcggagg 250

cttcctgctg cgagcccgct gggtggtctc ggccgcccac tgcttcagcc 300

acagagacct ccgcactggc ctggtggtgc tgggcgccca cgtcctgagt 350

actgcggagc ccacccagca ggtgtttggc atcgatgctc tcaccacgca 400

ccccgactac caccccatga cccacgccaa cgacatctgc ctgctgcggc 450

tgaacggctc tgctgtcctg ggccctgcag tggggctgct gaggctgcca 500

gggagaaggg ccaggcccccc cacagcgggg acacggtgcc gggtggctgg 550

ctggggcttc gtgtctgact ttgaggagct gccgcctgga ctgatggagg 600

ccaaggtccg agtgctggac ccggacgtct gcaacagctc ctggaagggc 650

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ccccaggaga agccgcctga gccacaacct tgcggcatgc aaatgagatg 950

gccgctccag gcctggaatg ttccgtggct gggccccacg ggaagcctga 1000

tgttcagggt tggggtggga cgggcagcgg tggggcacac ccattccaca 1050

tgcaaagggc agaagcaaac ccagtaaaat gttaactgac aaaaaaaaaa 1100

120

<210> 111
<211> 283
<212> PRT
<213> Homo sapiens

<400> 111

```
Met Gly Leu Gly Leu Arg Gly Trp Gly Arg Pro Leu Leu Thr Val
 1               5                  10                  15

Ala Thr Ala Leu Met Leu Pro Val Lys Pro Pro Ala Gly Ser Trp
                20                  25                  30

Gly Ala Gln Ile Ile Gly Gly His Glu Val Thr Pro His Ser Arg
                35                  40                  45

Pro Tyr Met Ala Ser Val Arg Phe Gly Gly Gln His His Cys Gly
                50                  55                  60

Gly Phe Leu Leu Arg Ala Arg Trp Val Val Ser Ala Ala His Cys
                65                  70                  75

Phe Ser His Arg Asp Leu Arg Thr Gly Leu Val Val Leu Gly Ala
                80                  85                  90

His Val Leu Ser Thr Ala Glu Pro Thr Gln Gln Val Phe Gly Ile
                95                  100                 105

Asp Ala Leu Thr Thr His Pro Asp Tyr His Pro Met Thr His Ala
                110                 115                 120

Asn Asp Ile Cys Leu Leu Arg Leu Asn Gly Ser Ala Val Leu Gly
                125                 130                 135

Pro Ala Val Gly Leu Leu Arg Leu Pro Gly Arg Arg Ala Arg Pro
                140                 145                 150

Pro Thr Ala Gly Thr Arg Cys Arg Val Ala Gly Trp Gly Phe Val
                155                 160                 165

Ser Asp Phe Glu Glu Leu Pro Pro Gly Leu Met Glu Ala Lys Val
                170                 175                 180

Arg Val Leu Asp Pro Asp Val Cys Asn Ser Ser Trp Lys Gly His
                185                 190                 195

Leu Thr Leu Thr Met Leu Cys Thr Arg Ser Gly Asp Ser His Arg
                200                 205                 210

Arg Gly Phe Cys Ser Ala Asp Ser Gly Gly Pro Leu Val Cys Arg
                215                 220                 225

Asn Arg Ala His Gly Leu Val Ser Phe Ser Gly Leu Trp Cys Gly
                230                 235                 240

Asp Pro Lys Thr Pro Asp Val Tyr Thr Gln Val Ser Ala Phe Val
                245                 250                 255
```

```
Ala Trp Ile Trp Asp Val Val Arg Arg Ser Ser Pro Gln Pro Gly
                260                     265             270

Pro Leu Pro Gly Thr Thr Arg Pro Pro Gly Glu Ala Ala
                275             280
```

<210> 112
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 112
  gacgtctgca acagctcctg gaag 24

<210> 113
<211> 23
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-23
<223> Synthetic construct.

<400> 113
  cgagaaggaa acgaggccgt gag 23

<210> 114
<211> 44
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-44
<223> Synthetic construct.

<400> 114
  tgacacttac catgctctgc acccgcagtg gggacagcca caga 44

<210> 115
<211> 1808
<212> DNA
<213> Homo sapiens

<400> 115
  gagctaccca ggcggctggt gtgcagcaag ctccgcgccg actccggacg 50

  cctgacgcct gacgcctgtc cccggcccgg catgagccgc tacctgctgc 100

  cgctgtcggc gctgggcacg gtagcaggcg ccgccgtgct gctcaaggac 150

  tatgtcaccg gtggggcttg ccccagcaag gccaccatcc ctgggaagac 200

```
ggtcatcgtg acgggcgcca acacaggcat cgggaagcag accgccttgg 250

aactggccag gagaggaggc aacatcatcc tggcctgccg agacatggag 300

aagtgtgagg cggcagcaaa ggacatccgc ggggagaccc tcaatcacca 350

tgtcaacgcc cggcacctgg acttggcttc cctcaagtct atccgagagt 400

ttgcagcaaa gatcattgaa gaggaggagc gagtggacat tctaatcaac 450

aacgcgggtg tgatgcggtg cccccactgg accaccgagg acggcttcga 500

gatgcagttt ggcgttaacc acctgggtca ctttctcttg acaaacttgc 550

tgctggacaa gctgaaagcc tcagcccctt cgcggatcat caacctctcg 600

tccctggccc atgttgctgg gcacatagac tttgacgact tgaactggca 650

gacgaggaag tataacacca aagccgccta ctgccagagc aagctcgcca 700

tcgtcctctt caccaaggag ctgagccggc ggctgcaagg ctctggtgtg 750

actgtcaacg ccctgcaccc cggcgtggcc aggacagagc tgggcagaca 800

cacgggcatc catggctcca ccttctccag caccacactc gggcccatct 850

tctggctgct ggtcaagagc cccgagctgg ccgcccagcc cagcacatac 900

ctggccgtgg cggaggaact ggcggatgtt tccggaaagt acttcgatgg 950

actcaaacag aaggccccgg cccccgaggc tgaggatgag gaggtggccc 1000

ggaggctttg ggctgaaagt gcccgcctgg tgggcttaga ggctccctct 1050

gtgagggagc agcccctccc cagataacct ctggagcaga tttgaaagcc 1100

aggatggcgc ctccagaccg aggacagctg tccgccatgc ccgcagcttc 1150

ctggcactac ctgagccggg agacccagga ctggcggccg ccatgcccgc 1200

agtaggttct aggggcggt gctggccgca gtggactggc ctgcaggtga 1250

gcactgcccc gggctctggc tggttccgtc tgctctgctg ccagcagggg 1300

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gtcctctctg agccttggtt tcttcagcag tgagatgctc agaataactg 1550

ctgtctccca tgatggtgtg gtacagcgag ctgttgtctg gctatggcat 1600

ggctgtgccg ggggtgtttg ctgagggctt cctgtgccag agcccagcca 1650
```

123

```
gagagcaggt gcaggtgtca tcccgagttc aggctctgca cggcatggag 1700

tgggaacccc accagctgct gctacaggac ctgggattgc ctgggactcc 1750

caccttccta tcaattctca tggtagtcca aactgcagac tctcaaactt 1800

gctcattt 1808
```

\<210\> 116
\<211\> 331
\<212\> PRT
\<213\> Homo sapiens

\<400\> 116

Met	Ser	Arg	Tyr	Leu	Leu	Pro	Leu	Ser	Ala	Leu	Gly	Thr	Val	Ala
1				5					10					15

Gly	Ala	Ala	Val	Leu	Leu	Lys	Asp	Tyr	Val	Thr	Gly	Gly	Ala	Cys
				20					25					30

Pro	Ser	Lys	Ala	Thr	Ile	Pro	Gly	Lys	Thr	Val	Ile	Val	Thr	Gly
				35					40					45

Ala	Asn	Thr	Gly	Ile	Gly	Lys	Gln	Thr	Ala	Leu	Glu	Leu	Ala	Arg
				50					55					60

Arg	Gly	Gly	Asn	Ile	Ile	Leu	Ala	Cys	Arg	Asp	Met	Glu	Lys	Cys
				65					70					75

Glu	Ala	Ala	Ala	Lys	Asp	Ile	Arg	Gly	Glu	Thr	Leu	Asn	His	His
				80					85					90

Val	Asn	Ala	Arg	His	Leu	Asp	Leu	Ala	Ser	Leu	Lys	Ser	Ile	Arg
				95					100					105

Glu	Phe	Ala	Ala	Lys	Ile	Ile	Glu	Glu	Glu	Arg	Val	Asp	Ile
				110					115					120

Leu	Ile	Asn	Asn	Ala	Gly	Val	Met	Arg	Cys	Pro	His	Trp	Thr	Thr
				125					130					135

Glu	Asp	Gly	Phe	Glu	Met	Gln	Phe	Gly	Val	Asn	His	Leu	Gly	His
				140					145					150

Phe	Leu	Leu	Thr	Asn	Leu	Leu	Leu	Asp	Lys	Leu	Lys	Ala	Ser	Ala
				155					160					165

Pro	Ser	Arg	Ile	Ile	Asn	Leu	Ser	Ser	Leu	Ala	His	Val	Ala	Gly
				170					175					180

His	Ile	Asp	Phe	Asp	Asp	Leu	Asn	Trp	Gln	Thr	Arg	Lys	Tyr	Asn
				185					190					195

Thr	Lys	Ala	Ala	Tyr	Cys	Gln	Ser	Lys	Leu	Ala	Ile	Val	Leu	Phe
				200					205					210

Thr	Lys	Glu	Leu	Ser	Arg	Arg	Leu	Gln	Gly	Ser	Gly	Val	Thr	Val
				215					220					225

124

```
Asn Ala Leu His Pro Gly Val Ala Arg Thr Glu Leu Gly Arg His
                230             235                 240

Thr Gly Ile His Gly Ser Thr Phe Ser Ser Thr Thr Leu Gly Pro
                245             250                 255

Ile Phe Trp Leu Leu Val Lys Ser Pro Glu Leu Ala Ala Gln Pro
                260             265                 270

Ser Thr Tyr Leu Ala Val Ala Glu Glu Leu Ala Asp Val Ser Gly
                275             280                 285

Lys Tyr Phe Asp Gly Leu Lys Gln Lys Ala Pro Ala Pro Glu Ala
                290             295                 300

Glu Asp Glu Glu Val Ala Arg Arg Leu Trp Ala Glu Ser Ala Arg
                305             310                 315

Leu Val Gly Leu Glu Ala Pro Ser Val Arg Glu Gln Pro Leu Pro
                320             325                 330

Arg
```

```
<210> 117
<211> 2249
<212> DNA
<213> Homo sapiens

<400> 117
 gaagttcgcg agcgctggca tgtggtcctg gggcgcggct ggcggcgctg 50

 ctggcggtgc tggcgctcgg gacaggagac ccagaaaggg ctgcggctcg 100

 gggcgacacg ttctcggcgc tgaccagcgt ggcgcgcgcc ctggcgcccg 150

 agcgccggct gctggggctg ctgaggcggt acctgcgcgg ggaggaggcg 200

 cggctgcggg acctgactag attctacgac aaggtacttt ctttgcatga 250

 ggattcaaca acccctgtgg ctaaccctct gcttgcattt actctcatca 300

 aacgcctgca gtctgactgg aggaatgtgg tacatagtct ggaggccagt 350

 gagaacatcc gagctctgaa ggatggctat gagaaggtgg agcaagacct 400

 tccagccttt gaggaccttg agggagcagc aagggccctg atgcggctgc 450

 aggacgtgta catgctcaat gtgaaaggcc tggcccgagg tgtctttcag 500

 agagtcactg gctctgccat cactgacctg tacagcccca acggctctt 550

 ttctctcaca ggggatgact gcttccaagt tggcaaggtg gcctatgaca 600

 tgggggatta ttaccatgcc attccatggc tggaggaggc tgtcagtctc 650

 ttccgaggat cttacggaga gtggaagaca gaggatgagg caagtctaga 700
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```
agatgccttg gatcacttgg cctttgctta tttccgggca ggaaatgttt 750

cgtgtgccct cagcctctct cgggagtttc ttctctacag cccagataat 800

aagaggatgg ccaggaatgt cttgaaatat gaaaggctct tggcagagag 850

ccccaaccac gtggtagctg aggctgtcat ccagaggccc aatatacccc 900

acctgcagac cagagacacc tacgaggggc tatgtcagac cctgggttcc 950

cagcccactc tctaccagat ccctagcctc tactgttcct atgagaccaa 1000

ttccaacgcc tacctgctgc tccagcccat ccggaaggag gtcatccacc 1050

tggagcccta cattgctctc taccatgact tcgtcagtga ctcagaggct 1100

cagaaaatta gagaacttgc agaaccatgg ctacagaggt cagtggtggc 1150

atcaggggag aagcagttac aagtggagta ccgcatcagc aaaagtgcct 1200

ggctgaagga cactgttgac ccaaaactgg tgaccctcaa ccaccgcatt 1250

gctgccctca caggccttga tgtccggcct ccctatgcag agtatctgca 1300

ggtggtgaac tatggcatcg gaggacacta tgagcctcac tttgaccatg 1350

ctacgtcacc aagcagcccc ctctacagaa tgaagtcagg aaaccgagtt 1400

gcaacattta tgatctatct gagctcggtg gaagctggag gagccacagc 1450

cttcatctat gccaacctca gcgtgcctgt ggttaggaat gcagcactgt 1500

tttggtggaa cctgcacagg agtggtgaag gggacagtga cacacttcat 1550

gctggctgtc ctgtcctggt gggagataag tgggtggcca acaagtggat 1600

acatgagtat ggacaggaat tccgcagacc ctgcagctcc agccctgaag 1650

actgaactgt tggcagagag aagctggtgg agtcctgtgg ctttccagag 1700

aagccaggag ccaaaagctg gggtaggaga ggagaaagca gagcagcctc 1750

ctggaagaag gccttgtcag ctttgtctgt gcctcgcaaa tcagaggcaa 1800

gggagaggtt gttaccaggg gacactgaga atgtacattt gatctgcccc 1850

agccacggaa gtcagagtag gatgcacagt acaaaggagg ggggagtgga 1900

ggcctgagag ggaagtttct ggagttcaga tactctctgt tgggaacagg 1950

acatctcaac agtctcaggt tcgatcagtg ggtctttggg cactttgaac 2000

cttgaccaca gggaccaaga agtggcaatg aggacacctg caggaggggc 2050

tagcctgact cccagaactt taagactttc tccccactgc cttctgctgc 2100

agcccaagca gggagtgtcc ccctcccaga agcatatccc agatgagtgg 2150
```

126

```
tacattatat aaggattttt tttaagttga aaacaacttt cttttctttt 2200

tgtatgatgg ttttttaaca cagtcattaa aaatgtttat aaatcaaaa 2249
```

<210> 118
<211> 544
<212> PRT
<213> Homo sapiens

<400> 118

```
Met Gly Pro Gly Ala Arg Leu Ala Ala Leu Leu Ala Val Leu Ala
 1               5                  10                  15

Leu Gly Thr Gly Asp Pro Glu Arg Ala Ala Ala Arg Gly Asp Thr
                20                  25                  30

Phe Ser Ala Leu Thr Ser Val Ala Arg Ala Leu Ala Pro Glu Arg
                35                  40                  45

Arg Leu Leu Gly Leu Leu Arg Arg Tyr Leu Arg Gly Glu Glu Ala
                50                  55                  60

Arg Leu Arg Asp Leu Thr Arg Phe Tyr Asp Lys Val Leu Ser Leu
                65                  70                  75

His Glu Asp Ser Thr Thr Pro Val Ala Asn Pro Leu Leu Ala Phe
                80                  85                  90

Thr Leu Ile Lys Arg Leu Gln Ser Asp Trp Arg Asn Val Val His
                95                  100                 105

Ser Leu Glu Ala Ser Glu Asn Ile Arg Ala Leu Lys Asp Gly Tyr
                110                 115                 120

Glu Lys Val Glu Gln Asp Leu Pro Ala Phe Glu Asp Leu Glu Gly
                125                 130                 135

Ala Ala Arg Ala Leu Met Arg Leu Gln Asp Val Tyr Met Leu Asn
                140                 145                 150

Val Lys Gly Leu Ala Arg Gly Val Phe Gln Arg Val Thr Gly Ser
                155                 160                 165

Ala Ile Thr Asp Leu Tyr Ser Pro Lys Arg Leu Phe Ser Leu Thr
                170                 175                 180

Gly Asp Asp Cys Phe Gln Val Gly Lys Val Ala Tyr Asp Met Gly
                185                 190                 195

Asp Tyr Tyr His Ala Ile Pro Trp Leu Glu Glu Ala Val Ser Leu
                200                 205                 210

Phe Arg Gly Ser Tyr Gly Glu Trp Lys Thr Glu Asp Glu Ala Ser
                215                 220                 225

Leu Glu Asp Ala Leu Asp His Leu Ala Phe Ala Tyr Phe Arg Ala
                230                 235                 240
```

127

```
Gly Asn Val Ser Cys Ala Leu Ser Leu Ser Arg Glu Phe Leu Leu
            245                 250                 255

Tyr Ser Pro Asp Asn Lys Arg Met Ala Arg Asn Val Leu Lys Tyr
            260                 265                 270

Glu Arg Leu Leu Ala Glu Ser Pro Asn His Val Val Ala Glu Ala
            275                 280                 285

Val Ile Gln Arg Pro Asn Ile Pro His Leu Gln Thr Arg Asp Thr
            290                 295                 300

Tyr Glu Gly Leu Cys Gln Thr Leu Gly Ser Gln Pro Thr Leu Tyr
            305                 310                 315

Gln Ile Pro Ser Leu Tyr Cys Ser Tyr Glu Thr Asn Ser Asn Ala
            320                 325                 330

Tyr Leu Leu Leu Gln Pro Ile Arg Lys Glu Val Ile His Leu Glu
            335                 340                 345

Pro Tyr Ile Ala Leu Tyr His Asp Phe Val Ser Asp Ser Glu Ala
            350                 355                 360

Gln Lys Ile Arg Glu Leu Ala Glu Pro Trp Leu Gln Arg Ser Val
            365                 370                 375

Val Ala Ser Gly Glu Lys Gln Leu Gln Val Glu Tyr Arg Ile Ser
            380                 385                 390

Lys Ser Ala Trp Leu Lys Asp Thr Val Asp Pro Lys Leu Val Thr
            395                 400                 405

Leu Asn His Arg Ile Ala Ala Leu Thr Gly Leu Asp Val Arg Pro
            410                 415                 420

Pro Tyr Ala Glu Tyr Leu Gln Val Val Asn Tyr Gly Ile Gly Gly
            425                 430                 435

His Tyr Glu Pro His Phe Asp His Ala Thr Ser Pro Ser Ser Pro
            440                 445                 450

Leu Tyr Arg Met Lys Ser Gly Asn Arg Val Ala Thr Phe Met Ile
            455                 460                 465

Tyr Leu Ser Ser Val Glu Ala Gly Gly Ala Thr Ala Phe Ile Tyr
            470                 475                 480

Ala Asn Leu Ser Val Pro Val Val Arg Asn Ala Ala Leu Phe Trp
            485                 490                 495

Trp Asn Leu His Arg Ser Gly Glu Gly Asp Ser Asp Thr Leu His
            500                 505                 510

Ala Gly Cys Pro Val Leu Val Gly Asp Lys Trp Val Ala Asn Lys
            515                 520                 525

Trp Ile His Glu Tyr Gly Gln Glu Phe Arg Arg Pro Cys Ser Ser
```

128

Ser Pro Glu Asp

<210> 119
<211> 23
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-23
<223> Synthetic construct.

<400> 119
 cgggacagga gacccagaaa ggg 23

<210> 120
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 120
 ggccaagtga tccaaggcat cttc 24

<210> 121
<211> 49
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-49
<223> Synthetic construct.

<400> 121
 ctgcgggacc tgactagatt ctacgacaag gtactttctt tgcatgggg 49

<210> 122
<211> 1778
<212> DNA
<213> Homo sapiens

<400> 122
 gagataggga gtctgggttt aagttcctgc tccatctcag gagcccctgc 50

 tcccaccccc aggaagccac cagactccac ggtgtggggc caatcaggtg 100

 gaatcggccc tggcaggtgg ggccacgagc gctggctgag ggaccgagcc 150

 ggagagcccc ggagcccccg taacccgcgc ggggagcgcc caggatgccg 200

```
cgcggggact cggagcaggt gcgctactgc gcgcgcttct cctacctctg 250

gctcaagttt tcacttatca tctattccac cgtgttctgg ctgattgggg 300

ccctggtcct gtctgtgggc atctatgcag aggttgagcg gcagaaatat 350

aaaacccttg aaagtgcctt cctggctcca gccatcatcc tcatcctcct 400

gggcgtcgtc atgttcatgg tctccttcat tggtgtgctg gcgtccctcc 450

gtgacaacct gtaccttctc caagcattca tgtacatcct tgggatctgc 500

ctcatcatgg agctcattgg tggcgtggtg gccttgacct ccggaacca 550

gaccattgac ttcctgaacg acaacattcg aagaggaatt gagaactact 600

atgatgatct ggacttcaaa aacatcatgg actttgttca gaaaaagttc 650

aagtgctgtg gcggggagga ctaccgagat tggagcaaga atcagtacca 700

cgactgcagt gcccctggac ccctggcctg tggggtgccc tacacctgct 750

gcatcaggaa cacgacagaa gttgtcaaca ccatgtgtgg ctacaaaact 800

atcgacaagg agcgtttcag tgtgcaggat gtcatctacg tgcggggctg 850

caccaacgcc gtgatcatct ggttcatgga caactacacc atcatggcgt 900

gcatcctcct gggcatcctg cttccccagt tcctggggg t gctgctgacg 950

ctgctgtaca tcacccgggt ggaggacatc atcatggagc actctgtcac 1000

tgatgggctc ctggggcccg gtgccaagcc cagcgtggag gcggcaggca 1050

cgggatgctg cttgtgctac cccaattagg gcccagcctg ccatggcagc 1100

tccaacaagg accgtctggg atagcacctc tcagtcaaca tcgtggggct 1150

ggacagggct gcggcccctc tgcccacact cagtactgac caaagccagg 1200

gctgtgtgtg cctgtgtgta ggtcccacgg cctctgcctc cccagggagc 1250

agagcctggg cctcccctaa gaggctttcc ccgaggcagc tctggaatct 1300

gtgcccacct ggggcctggg gaacaaggcc ctcctttctc caggcctggg 1350

ctacagggga gggagagcct gaggctctgc tcagggccca tttcatctct 1400

ggcagtgcct tggcggtggt attcaaggca gttttgtagc acctgtaatt 1450

ggggagaggg agtgtgcccc tcggggcagg agggaagggc atctggggaa 1500

gggcaggagg gaagagctgt ccatgcagcc acgcccatgg ccaggttggc 1550

ctcttctcag cctcccaggt gccttgagcc ctcttgcaag ggcggctgct 1600

tccttgagcc tagttttttt ttacgtgatt tttgtaacat tcattttttt 1650
```

```
gtacagataa caggagtttc tgactaatca aagctggtat ttccccgcat 1700

gtcttattct tgcccttccc ccaaccagtt tgttaatcaa acaataaaaa 1750

catgttttgt tttgttttta aaaaaaaa 1778
```

<210> 123
<211> 294
<212> PRT
<213> Homo sapiens

<400> 123

```
Met Pro Arg Gly Asp Ser Glu Gln Val Arg Tyr Cys Ala Arg Phe
 1               5                  10                  15

Ser Tyr Leu Trp Leu Lys Phe Ser Leu Ile Ile Tyr Ser Thr Val
                20                  25                  30

Phe Trp Leu Ile Gly Ala Leu Val Leu Ser Val Gly Ile Tyr Ala
                35                  40                  45

Glu Val Glu Arg Gln Lys Tyr Lys Thr Leu Glu Ser Ala Phe Leu
                50                  55                  60

Ala Pro Ala Ile Ile Leu Ile Leu Leu Gly Val Val Met Phe Met
                65                  70                  75

Val Ser Phe Ile Gly Val Leu Ala Ser Leu Arg Asp Asn Leu Tyr
                80                  85                  90

Leu Leu Gln Ala Phe Met Tyr Ile Leu Gly Ile Cys Leu Ile Met
                95                  100                 105

Glu Leu Ile Gly Gly Val Val Ala Leu Thr Phe Arg Asn Gln Thr
                110                 115                 120

Ile Asp Phe Leu Asn Asp Asn Ile Arg Arg Gly Ile Glu Asn Tyr
                125                 130                 135

Tyr Asp Asp Leu Asp Phe Lys Asn Ile Met Asp Phe Val Gln Lys
                140                 145                 150

Lys Phe Lys Cys Cys Gly Gly Glu Asp Tyr Arg Asp Trp Ser Lys
                155                 160                 165

Asn Gln Tyr His Asp Cys Ser Ala Pro Gly Pro Leu Ala Cys Gly
                170                 175                 180

Val Pro Tyr Thr Cys Cys Ile Arg Asn Thr Thr Glu Val Val Asn
                185                 190                 195

Thr Met Cys Gly Tyr Lys Thr Ile Asp Lys Glu Arg Phe Ser Val
                200                 205                 210

Gln Asp Val Ile Tyr Val Arg Gly Cys Thr Asn Ala Val Ile Ile
                215                 220                 225

Trp Phe Met Asp Asn Tyr Thr Ile Met Ala Cys Ile Leu Leu Gly
```

```
Ile Leu Leu Pro Gln Phe Leu Gly Val Leu Leu Thr Leu Leu Tyr
                245                      250                  255

Ile Thr Arg Val Glu Asp Ile Ile Met Glu His Ser Val Thr Asp
                260                      265                  270

Gly Leu Leu Gly Pro Gly Ala Lys Pro Ser Val Glu Ala Ala Gly
                275                      280                  285

Thr Gly Cys Cys Leu Cys Tyr Pro Asn
                290
```

<210> 124
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-25
<223> Synthetic construct.

<400> 124
 atcatctatt ccaccgtgtt ctggc 25

<210> 125
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-25
<223> Synthetic construct.

<400> 125
 gacagagtgc tccatgatga tgtcc 25

<210> 126
<211> 50
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 126
 cctgtctgtg ggcatctatg cagaggttga gcggcagaaa tataaaccc 50

<210> 127
<211> 1636
<212> DNA
<213> Homo sapiens

<400> 127

```
gaggagcggg ccgaggactc cagcgtgccc aggtctggca tcctgcactt 50

gctgccctct gacacctggg aagatggccg gcccgtggac cttcaccctt 100

ctctgtggtt tgctggcagc caccttgatc caagccaccc tcagtcccac 150

tgcagttctc atcctcggcc caaaagtcat caaagaaaag ctgacacagg 200

agctgaagga ccacaacgcc accagcatcc tgcagcagct gccgctgctc 250

agtgccatgc gggaaaagcc agccggaggc atccctgtgc tgggcagcct 300

ggtgaacacc gtcctgaagc acatcatctg gctgaaggtc atcacagcta 350

acatcctcca gctgcaggtg aagccctcgg ccaatgacca ggagctgcta 400

gtcaagatcc ccctggacat ggtggctgga ttcaacacgc ccctggtcaa 450

gaccatcgtg gagttccaca tgacgactga ggcccaagcc accatccgca 500

tggacaccag tgcaagtggc cccacccgcc tggtcctcag tgactgtgcc 550

accagccatg ggagcctgcg catccaactg ctgtataagc tctccttcct 600

ggtgaacgcc ttagctaagc aggtcatgaa cctcctagtg ccatccctgc 650

ccaatctagt gaaaaaccag ctgtgtcccg tgatcgaggc ttccttcaat 700

ggcatgtatg cagacctcct gcagctggtg aaggtgccca tttccctcag 750

cattgaccgt ctggagtttg accttctgta tcctgccatc aagggtgaca 800

ccattcagct ctacctgggg gccaagttgt tggactcaca gggaaaggtg 850

accaagtggt tcaataactc tgcagcttcc ctgacaatgc ccaccctgga 900

caacatcccg ttcagcctca tcgtgagtca ggacgtggtg aaagctgcag 950

tggctgctgt gctctctcca gaagaattca tggtcctgtt ggactctgtg 1000

cttcctgaga gtgcccatcg gctgaagtca agcatcgggc tgatcaatga 1050

aaaggctgca gataagctgg gatctaccca gatcgtgaag atcctaactc 1100

aggacactcc cgagtttttt atagaccaag gccatgccaa ggtggcccaa 1150

ctgatcgtgc tggaagtgtt tccctccagt gaagccctcc gccctttgtt 1200

caccctgggc atcgaagcca gctcggaagc tcagttttac accaaaggtg 1250

accaacttat actcaacttg aataacatca gctctgatcg gatccagctg 1300

atgaactctg ggattggctg gttccaacct gatgttctga aaaacatcat 1350

cactgagatc atccactcca tcctgctgcc gaaccagaat ggcaaattaa 1400

gatctggggt cccagtgtca ttggtgaagg ccttgggatt cgaggcagct 1450
```

133

```
gagtcctcac tgaccaagga tgcccttgtg cttactccag cctccttgtg 1500

gaaacccagc tctcctgtct cccagtgaag acttggatgg cagccatcag 1550

ggaaggctgg gtcccagctg ggagtatggg tgtgagctct atagaccatc 1600

cctctctgca atcaataaac acttgcctgt gaaaaa 1636
```

<210> 128
<211> 484
<212> PRT
<213> Homo sapiens

<400> 128

```
Met Ala Gly Pro Trp Thr Phe Thr Leu Leu Cys Gly Leu Leu Ala
1               5                   10                  15

Ala Thr Leu Ile Gln Ala Thr Leu Ser Pro Thr Ala Val Leu Ile
                20                  25                  30

Leu Gly Pro Lys Val Ile Lys Glu Lys Leu Thr Gln Glu Leu Lys
                35                  40                  45

Asp His Asn Ala Thr Ser Ile Leu Gln Gln Leu Pro Leu Leu Ser
                50                  55                  60

Ala Met Arg Glu Lys Pro Ala Gly Gly Ile Pro Val Leu Gly Ser
                65                  70                  75

Leu Val Asn Thr Val Leu Lys His Ile Ile Trp Leu Lys Val Ile
                80                  85                  90

Thr Ala Asn Ile Leu Gln Leu Gln Val Lys Pro Ser Ala Asn Asp
                95                  100                 105

Gln Glu Leu Leu Val Lys Ile Pro Leu Asp Met Val Ala Gly Phe
                110                 115                 120

Asn Thr Pro Leu Val Lys Thr Ile Val Glu Phe His Met Thr Thr
                125                 130                 135

Glu Ala Gln Ala Thr Ile Arg Met Asp Thr Ser Ala Ser Gly Pro
                140                 145                 150

Thr Arg Leu Val Leu Ser Asp Cys Ala Thr Ser His Gly Ser Leu
                155                 160                 165

Arg Ile Gln Leu Leu Tyr Lys Leu Ser Phe Leu Val Asn Ala Leu
                170                 175                 180

Ala Lys Gln Val Met Asn Leu Leu Val Pro Ser Leu Pro Asn Leu
                185                 190                 195

Val Lys Asn Gln Leu Cys Pro Val Ile Glu Ala Ser Phe Asn Gly
                200                 205                 210

Met Tyr Ala Asp Leu Leu Gln Leu Val Lys Val Pro Ile Ser Leu
                215                 220                 225
```

134

```
Ser Ile Asp Arg Leu Glu Phe Asp Leu Leu Tyr Pro Ala Ile Lys
            230                 235             240

Gly Asp Thr Ile Gln Leu Tyr Leu Gly Ala Lys Leu Leu Asp Ser
            245                 250             255

Gln Gly Lys Val Thr Lys Trp Phe Asn Asn Ser Ala Ala Ser Leu
            260                 265             270

Thr Met Pro Thr Leu Asp Asn Ile Pro Phe Ser Leu Ile Val Ser
            275                 280             285

Gln Asp Val Val Lys Ala Ala Val Ala Ala Val Leu Ser Pro Glu
            290                 295             300

Glu Phe Met Val Leu Leu Asp Ser Val Leu Pro Glu Ser Ala His
            305                 310             315

Arg Leu Lys Ser Ser Ile Gly Leu Ile Asn Glu Lys Ala Ala Asp
            320                 325             330

Lys Leu Gly Ser Thr Gln Ile Val Lys Ile Leu Thr Gln Asp Thr
            335                 340             345

Pro Glu Phe Phe Ile Asp Gln Gly His Ala Lys Val Ala Gln Leu
            350                 355             360

Ile Val Leu Glu Val Phe Pro Ser Ser Glu Ala Leu Arg Pro Leu
            365                 370             375

Phe Thr Leu Gly Ile Glu Ala Ser Ser Glu Ala Gln Phe Tyr Thr
            380                 385             390

Lys Gly Asp Gln Leu Ile Leu Asn Leu Asn Asn Ile Ser Ser Asp
            395                 400             405

Arg Ile Gln Leu Met Asn Ser Gly Ile Gly Trp Phe Gln Pro Asp
            410                 415             420

Val Leu Lys Asn Ile Ile Thr Glu Ile Ile His Ser Ile Leu Leu
            425                 430             435

Pro Asn Gln Asn Gly Lys Leu Arg Ser Gly Val Pro Val Ser Leu
            440                 445             450

Val Lys Ala Leu Gly Phe Glu Ala Ala Glu Ser Ser Leu Thr Lys
            455                 460             465

Asp Ala Leu Val Leu Thr Pro Ala Ser Leu Trp Lys Pro Ser Ser
            470                 475             480

Pro Val Ser Gln
```

<400> 129
```
gagcgaacat ggcagcgcgt tggcggtttt ggtgtgtctc tgtgaccatg 50

gtggtggcgc tgctcatcgt ttgcgacgtt ccctcagcct ctgcccaaag 100

aaagaaggag atggtgttat ctgaaaaggt tagtcagctg atggaatgga 150

ctaacaaaag acctgtaata agaatgaatg gagacaagtt ccgtcgcctt 200

gtgaaagccc caccgagaaa ttactccgtt atcgtcatgt tcactgctct 250

ccaactgcat agacagtgtg tcgtttgcaa gcaagctgat gaagaattcc 300

agatcctggc aaactcctgg cgatactcca gtgcattcac caacaggata 350

ttttttgcca tggtggattt tgatgaaggc tctgatgtat ttcagatgct 400

aaacatgaat tcagctccaa ctttcatcaa ctttcctgca aaagggaaac 450

ccaaacgggg tgatacatat gagttacagg tgcggggttt ttcagctgag 500

cagattgccc ggtggatcgc cgacagaact gatgtcaata ttagagtgat 550

tagacccca aattatgctg gtccccttat gttgggattg cttttggctg 600

ttattggtgg acttgtgtat cttcgaagaa gtaatatgga atttctcttt 650

aataaaactg gatgggcttt tgcagctttg tgttttgtgc ttgctatgac 700

atctggtcaa atgtggaacc atataagagg accaccatat gcccataaga 750

atccccacac gggacatgtg aattatatcc atggaagcag tcaagcccag 800

tttgtagctg aaacacacat tgttcttctg tttaatggtg gagttacctt 850

aggaatggtg cttttatgtg aagctgctac ctctgacatg gatattggaa 900

agcgaaagat aatgtgtgtg gctggtattg gacttgttgt attattcttc 950

agttggatgc tctctatttt tagatctaaa tatcatggct acccatacag 1000

ctttctgatg agttaaaaag gtcccagaga tatatagaca ctggagtact 1050

ggaaattgaa aaacgaaaat cgtgtgtgtt tgaaagaag aatgcaactt 1100

gtatattttg tattacctct tttttttcaag tgatttaaat agttaatcat 1150

ttaaccaaag aagatgtgta gtgccttaac aagcaatcct ctgtcaaaat 1200

ctgaggtatt tgaaaataat tatcctctta accttctctt cccagtgaac 1250

tttatggaac atttaattta gtacaattaa gtatattata aaaattgtaa 1300

aactactact ttgttttagt tagaacaaag ctcaaaacta ctttagttaa 1350

cttggtcatc tgattttata ttgccttatc caaagatggg gaaagtaagt 1400

cctgaccagg tgttcccaca tatgcctgtt acagataact acattaggaa 1450
```

136

```
ttcattctta gcttcttcat ctttgtgtgg atgtgtatac tttacgcatc 1500

tttccttttg agtagagaaa ttatgtgtgt catgtggtct tctgaaaatg 1550

gaacaccatt cttcagagca cacgtctagc cctcagcaag acagttgttt 1600

ctcctcctcc ttgcatattt cctactgcgc tccagcctga gtgatagagt 1650

gagactctgt ctcaaaaaaa agtatctcta aatacaggat tataatttct 1700

gcttgagtat ggtgttaact accttgtatt tagaaagatt tcagattcat 1750

tccatctcct tagttttctt ttaaggtgac ccatctgtga taaaaatata 1800

gcttagtgct aaaatcagtg taacttatac atggcctaaa atgtttctac 1850

aaattagagt ttgtcactta ttccatttgt acctaagaga aaaataggct 1900

cagttagaaa aggactccct ggccaggcgc agtgacttac gcctgtaatc 1950

tcagcacttt gggaggccaa ggcaggcaga tcacgaggtc aggagttcga 2000

gaccatcctg gccaacatgg tgaaaccccg tctctactaa aaatataaaa 2050

attagctggg tgtggtggca ggagcctgta atcccagcta cacaggaggc 2100

tgaggcacga gaatcacttg aactcaggag atggaggttt cagtgagccg 2150

agatcacgcc actgcactcc agcctggcaa cagagcgaga ctccatctca 2200

aaaaaaaaaa aaa 2213
```

<210> 130
<211> 335
<212> PRT
<213> Homo sapiens

<400> 130

```
Met Ala Ala Arg Trp Arg Phe Trp Cys Val Ser Val Thr Met Val
 1               5                  10                  15

Val Ala Leu Leu Ile Val Cys Asp Val Pro Ser Ala Ser Ala Gln
                20                  25                  30

Arg Lys Lys Glu Met Val Leu Ser Glu Lys Val Ser Gln Leu Met
                35                  40                  45

Glu Trp Thr Asn Lys Arg Pro Val Ile Arg Met Asn Gly Asp Lys
                50                  55                  60

Phe Arg Arg Leu Val Lys Ala Pro Pro Arg Asn Tyr Ser Val Ile
                65                  70                  75

Val Met Phe Thr Ala Leu Gln Leu His Arg Gln Cys Val Val Cys
                80                  85                  90

Lys Gln Ala Asp Glu Glu Phe Gln Ile Leu Ala Asn Ser Trp Arg
                95                  100                 105
```

137

```
Tyr Ser Ser Ala Phe Thr Asn Arg Ile Phe Phe Ala Met Val Asp
            110             115             120

Phe Asp Glu Gly Ser Asp Val Phe Gln Met Leu Asn Met Asn Ser
            125             130             135

Ala Pro Thr Phe Ile Asn Phe Pro Ala Lys Gly Lys Pro Lys Arg
            140             145             150

Gly Asp Thr Tyr Glu Leu Gln Val Arg Gly Phe Ser Ala Glu Gln
            155             160             165

Ile Ala Arg Trp Ile Ala Asp Arg Thr Asp Val Asn Ile Arg Val
            170             175             180

Ile Arg Pro Pro Asn Tyr Ala Gly Pro Leu Met Leu Gly Leu Leu
            185             190             195

Leu Ala Val Ile Gly Gly Leu Val Tyr Leu Arg Arg Ser Asn Met
            200             205             210

Glu Phe Leu Phe Asn Lys Thr Gly Trp Ala Phe Ala Ala Leu Cys
            215             220             225

Phe Val Leu Ala Met Thr Ser Gly Gln Met Trp Asn His Ile Arg
            230             235             240

Gly Pro Pro Tyr Ala His Lys Asn Pro His Thr Gly His Val Asn
            245             250             255

Tyr Ile His Gly Ser Ser Gln Ala Gln Phe Val Ala Glu Thr His
            260             265             270

Ile Val Leu Leu Phe Asn Gly Gly Val Thr Leu Gly Met Val Leu
            275             280             285

Leu Cys Glu Ala Ala Thr Ser Asp Met Asp Ile Gly Lys Arg Lys
            290             295             300

Ile Met Cys Val Ala Gly Ile Gly Leu Val Val Leu Phe Phe Ser
            305             310             315

Trp Met Leu Ser Ile Phe Arg Ser Lys Tyr His Gly Tyr Pro Tyr
            320             325             330

Ser Phe Leu Met Ser
            335
```

<210> 131
<211> 2476
<212> DNA
<213> Homo sapiens

<400> 131
aagcaaccaa actgcaagct ttgggagttg ttcgctgtcc ctgccctgct 50

ctgctaggga gagaacgcca gagggaggcg gctggcccgg cggcaggctc 100

tcagaaccgc taccggcgat gctactgctg tgggtgtcgg tggtcgcagc 150

cttggcgctg gcggtactgg cccccggagc aggggagcag aggcggagag 200

cagccaaagc gcccaatgtg gtgctggtcg tgagcgactc cttcgatgga 250

aggttaacat ttcatccagg aagtcaggta gtgaaacttc cttttatcaa 300

ctttatgaag acacgtggga cttcctttct gaatgcctac acaaactctc 350

caatttgttg cccatcacgc gcagcaatgt ggagtggcct cttcactcac 400

ttaacagaat cttggaataa ttttaagggt ctagatccaa attatacaac 450

atggatggat gtcatggaga ggcatggcta ccgaacacag aaatttggga 500

aactggacta tacttcagga catcactcca ttagtaatcg tgtggaagcg 550

tggacaagag atgttgcttt cttactcaga caagaaggca ggcccatggt 600

taatcttatc cgtaacagga ctaaagtcag agtgatggaa agggattggc 650

agaatacaga caaagcagta aactggttaa gaaaggaagc aattaattac 700

actgaaccat ttgttatttta cttgggatta aatttaccac acccttaccc 750

ttcaccatct tctggagaaa attttggatc ttcaacattt cacacatctc 800

tttattggct tgaaaaagtg tctcatgatg ccatcaaaat cccaaagtgg 850

tcacctttgt cagaaatgca ccctgtagat tattactctt cttatacaaa 900

aaactgcact ggaagattta caaaaaaaga aattaagaat attagagcat 950

tttattatgc tatgtgtgct gagacagatg ccatgcttgg tgaaattatt 1000

ttggcccttc atcaattaga tcttcttcag aaaactattg tcatatactc 1050

ctcagaccat ggagagctgg ccatggaaca tcgacagttt tataaaatga 1100

gcatgtacga ggctagtgca catgttccgc ttttgatgat gggaccagga 1150

attaaagccg gcctacaagt atcaaatgtg gtttctcttg tggatatttta 1200

ccctaccatg cttgatattg ctggaattcc tctgcctcag aacctgagtg 1250

gatactcttt gttgccgtta tcatcagaaa catttaagaa tgaacataaa 1300

gtcaaaaacc tgcatccacc ctggattctg agtgaattcc atggatgtaa 1350

tgtgaatgcc tccacctaca tgcttcgaac taaccactgg aaatatatag 1400

cctattcgga tggtgcatca atattgcctc aactctttga tctttcctcg 1450

gatccagatg aattaacaaa tgttgctgta aaatttccag aaattactta 1500

ttctttggat cagaagcttc attccattat aaactaccct aaagtttctg 1550

139

```
cttctgtcca ccagtataat aaagagcagt ttatcaagtg gaaacaaagt 1600

ataggacaga attattcaaa cgttatagca aatcttaggt ggcaccaaga 1650

ctggcagaag gaaccaagga agtatgaaaa tgcaattgat cagtggctta 1700

aaacccatat gaatccaaga gcagtttgaa caaaaagttt aaaaatagtg 1750

ttctagagat acatataaat atattacaag atcataatta tgtattttaa 1800

atgaaacagt tttaataatt accaagtttt ggccgggcac agtggctcac 1850

acctgtaatc ccaggacttt gggaggctga ggaaagcaga tcacaaggtc 1900

aagagattga gaccatcctg gccaacatgg tgaaaccctg tctctactaa 1950

aaatacaaaa attagctggg cgcggtggtg cacacctata gtctcagcta 2000

ctcagaggct gaggcaggag gatcgcttga acccgggagg cagcagttgc 2050

agtgagctga gattgcgcca ctgtactcca gcctggcaac agagtgagac 2100

tgtgtcgcaa aaaataaaaa ataaataat aataattacc aatttttcat 2150

tattttgtaa gaatgtagtg tattttaaga taaaatgcca atgattataa 2200

aatcacatat tttcaaaaat ggttattatt taggcctttg tacaatttct 2250

aacaatttag tggaagtatc aaaaggattg aagcaaatac tgtaacagtt 2300

atgttccttt aaataataga gaatataaaa tattgtaata atatgtatca 2350

taaaatagtt gtatgtgagc atttgatggt gaaaaaaaaa aaaaaaaaaa 2400

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2450

aaaaaaaaaa aaaaaaaaaa aaaaaa 2476
```

<210> 132
<211> 536
<212> PRT
<213> Homo sapiens

<400> 132

```
Met Leu Leu Leu Trp Val Ser Val Val Ala Ala Leu Ala Leu Ala
 1               5                  10                  15

Val Leu Ala Pro Gly Ala Gly Glu Gln Arg Arg Arg Ala Ala Lys
                20                  25                  30

Ala Pro Asn Val Val Leu Val Val Ser Asp Ser Phe Asp Gly Arg
                35                  40                  45

Leu Thr Phe His Pro Gly Ser Gln Val Val Lys Leu Pro Phe Ile
                50                  55                  60

Asn Phe Met Lys Thr Arg Gly Thr Ser Phe Leu Asn Ala Tyr Thr
                65                  70                  75
```

140

```
Asn Ser Pro Ile Cys Cys Pro Ser Arg Ala Ala Met Trp Ser Gly
             80              85                      90

Leu Phe Thr His Leu Thr Glu Ser Trp Asn Asn Phe Lys Gly Leu
             95             100                     105

Asp Pro Asn Tyr Thr Thr Trp Met Asp Val Met Glu Arg His Gly
            110             115                     120

Tyr Arg Thr Gln Lys Phe Gly Lys Leu Asp Tyr Thr Ser Gly His
            125             130                     135

His Ser Ile Ser Asn Arg Val Glu Ala Trp Thr Arg Asp Val Ala
            140             145                     150

Phe Leu Leu Arg Gln Glu Gly Arg Pro Met Val Asn Leu Ile Arg
            155             160                     165

Asn Arg Thr Lys Val Arg Val Met Glu Arg Asp Trp Gln Asn Thr
            170             175                     180

Asp Lys Ala Val Asn Trp Leu Arg Lys Glu Ala Ile Asn Tyr Thr
            185             190                     195

Glu Pro Phe Val Ile Tyr Leu Gly Leu Asn Leu Pro His Pro Tyr
            200             205                     210

Pro Ser Pro Ser Ser Gly Glu Asn Phe Gly Ser Ser Thr Phe His
            215             220                     225

Thr Ser Leu Tyr Trp Leu Glu Lys Val Ser His Asp Ala Ile Lys
            230             235                     240

Ile Pro Lys Trp Ser Pro Leu Ser Glu Met His Pro Val Asp Tyr
            245             250                     255

Tyr Ser Ser Tyr Thr Lys Asn Cys Thr Gly Arg Phe Thr Lys Lys
            260             265                     270

Glu Ile Lys Asn Ile Arg Ala Phe Tyr Tyr Ala Met Cys Ala Glu
            275             280                     285

Thr Asp Ala Met Leu Gly Glu Ile Ile Leu Ala Leu His Gln Leu
            290             295                     300

Asp Leu Leu Gln Lys Thr Ile Val Ile Tyr Ser Ser Asp His Gly
            305             310                     315

Glu Leu Ala Met Glu His Arg Gln Phe Tyr Lys Met Ser Met Tyr
            320             325                     330

Glu Ala Ser Ala His Val Pro Leu Leu Met Met Gly Pro Gly Ile
            335             340                     345

Lys Ala Gly Leu Gln Val Ser Asn Val Val Ser Leu Val Asp Ile
            350             355                     360

Tyr Pro Thr Met Leu Asp Ile Ala Gly Ile Pro Leu Pro Gln Asn
```

141

```
                    365                     370                      375
    Leu Ser Gly Tyr Ser Leu Leu Pro Leu Ser Ser Glu Thr Phe Lys
                    380                     385                      390
    Asn Glu His Lys Val Lys Asn Leu His Pro Pro Trp Ile Leu Ser
                    395                     400                      405
    Glu Phe His Gly Cys Asn Val Asn Ala Ser Thr Tyr Met Leu Arg
                    410                     415                      420
    Thr Asn His Trp Lys Tyr Ile Ala Tyr Ser Asp Gly Ala Ser Ile
                    425                     430                      435
    Leu Pro Gln Leu Phe Asp Leu Ser Ser Asp Pro Asp Glu Leu Thr
                    440                     445                      450
    Asn Val Ala Val Lys Phe Pro Glu Ile Thr Tyr Ser Leu Asp Gln
                    455                     460                      465
    Lys Leu His Ser Ile Ile Asn Tyr Pro Lys Val Ser Ala Ser Val
                    470                     475                      480
    His Gln Tyr Asn Lys Glu Gln Phe Ile Lys Trp Lys Gln Ser Ile
                    485                     490                      495
    Gly Gln Asn Tyr Ser Asn Val Ile Ala Asn Leu Arg Trp His Gln
                    500                     505                      510
    Asp Trp Gln Lys Glu Pro Arg Lys Tyr Glu Asn Ala Ile Asp Gln
                    515                     520                      525
    Trp Leu Lys Thr His Met Asn Pro Arg Ala Val
                    530                     535
```

<210> 133
<211> 1475
<212> DNA
<213> Homo sapiens

<400> 133
```
gagagaagtc agcctggcag agagactctg aaatgaggga ttagaggtgt 50

tcaaggagca agagcttcag cctgaagaca agggagcagt ccctgaagac 100

gcttctactg agaggtctgc catggcctct cttggcctcc aacttgtggg 150

ctacatccta ggccttctgg ggcttttggg cacactggtt gccatgctgc 200

tccccagctg gaaaacaagt cttatgtcg gtgccagcat tgtgacagca 250

gttggcttct ccaagggcct ctggatggaa tgtgccacac acagcacagg 300

catcacccag tgtgacatct atagcaccct tctgggcctg cccgctgaca 350

tccaggctgc ccaggccatg atggtgacat ccagtgcaat ctcctccctg 400

gcctgcatta tctctgtggt gggcatgaga tgcacagtct tctgccagga 450
```

142

```
atcccgagcc aaagacagag tggcggtagc aggtggagtc tttttcatcc 500

ttggaggcct cctgggattc attcctgttg cctggaatct tcatgggatc 550

ctacgggact tctactcacc actggtgcct gacagcatga aatttgagat 600

tggagaggct ctttacttgg gcattatttc ttccctgttc tccctgatag 650

ctggaatcat cctctgcttt tcctgctcat cccagagaaa tcgctccaac 700

tactacgatg cctaccaagc ccaacctctt gccacaagga gctctccaag 750

gcctggtcaa cctcccaaag tcaagagtga gttcaattcc tacagcctga 800

cagggtatgt gtgaagaacc aggggccaga gctgggggggt ggctgggtct 850

gtgaaaaaca gtggacagca ccccgagggc cacaggtgag ggacactacc 900

actggatcgt gtcagaaggt gctgctgagg atagactgac tttggccatt 950

ggattgagca aaggcagaaa tgggggctag tgtaacagca tgcaggttga 1000

attgccaagg atgctcgcca tgccagcctt tctgtttttcc tcaccttgct 1050

gctcccctgc cctaagtccc caaccctcaa cttgaaaccc cattcccttta 1100

agccaggact cagaggatcc ctttgccctc tggtttacct gggactccat 1150

ccccaaaccc actaatcaca tcccactgac tgaccctctg tgatcaaaga 1200

ccctctctct ggctgaggtt ggctcttagc tcattgctgg ggatgggaag 1250

gagaagcagt ggcttttgtg ggcattgctc taacctactt ctcaagcttc 1300

cctccaaaga aactgattgg ccctggaacc tccatcccac tcttgttatg 1350

actccacagt gtccagacta atttgtgcat gaactgaaat aaaaccatcc 1400

tacggtatcc agggaacaga aagcaggatg caggatggga ggacaggaag 1450

gcagcctggg acatttaaaa aaata 1475
```

<210> 134
<211> 230
<212> PRT
<213> Homo sapiens

<400> 134

```
Met Ala Ser Leu Gly Leu Gln Leu Val Gly Tyr Ile Leu Gly Leu
 1               5                  10                  15

Leu Gly Leu Leu Gly Thr Leu Val Ala Met Leu Leu Pro Ser Trp
                20                  25                  30

Lys Thr Ser Ser Tyr Val Gly Ala Ser Ile Val Thr Ala Val Gly
                35                  40                  45

Phe Ser Lys Gly Leu Trp Met Glu Cys Ala Thr His Ser Thr Gly
```

143

```
                    50                      55                      60
       Ile Thr Gln Cys Asp Ile Tyr Ser Thr Leu Leu Gly Leu Pro Ala
                        65                      70                      75
       Asp Ile Gln Ala Ala Gln Ala Met Met Val Thr Ser Ser Ala Ile
                        80                      85                      90
       Ser Ser Leu Ala Cys Ile Ile Ser Val Val Gly Met Arg Cys Thr
                        95                     100                     105
       Val Phe Cys Gln Glu Ser Arg Ala Lys Asp Arg Val Ala Val Ala
                       110                     115                     120
       Gly Gly Val Phe Phe Ile Leu Gly Gly Leu Leu Gly Phe Ile Pro
                       125                     130                     135
       Val Ala Trp Asn Leu His Gly Ile Leu Arg Asp Phe Tyr Ser Pro
                       140                     145                     150
       Leu Val Pro Asp Ser Met Lys Phe Glu Ile Gly Glu Ala Leu Tyr
                       155                     160                     165
       Leu Gly Ile Ile Ser Ser Leu Phe Ser Leu Ile Ala Gly Ile Ile
                       170                     175                     180
       Leu Cys Phe Ser Cys Ser Ser Gln Arg Asn Arg Ser Asn Tyr Tyr
                       185                     190                     195
       Asp Ala Tyr Gln Ala Gln Pro Leu Ala Thr Arg Ser Ser Pro Arg
                       200                     205                     210
       Pro Gly Gln Pro Pro Lys Val Lys Ser Glu Phe Asn Ser Tyr Ser
                       215                     220                     225
       Leu Thr Gly Tyr Val
                       230
```

<210> 135
<211> 610
<212> DNA
<213> Homo sapiens

<400> 135
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 gcactgctgc tgtcccatca gctgctctga agctccatgg tgcccagaat 50

 cttcgctcct gcttatgtgt cagtctgtct cctcctcttg tgtccaaggg 100

 aagtcatcgc tcccgctggc tcagaaccat ggctgtgcca gccggcaccc 150

 aggtgtggag acaagatcta caaccccttg gagcagtgct gttacaatga 200

 cgccatcgtg tccctgagcg agacccgcca atgtggtccc ccctgcacct 250

 tctggccctg ctttgagctc tgctgtcttg attcctttgg cctcacaaac 300

 gattttgttg tgaagctgaa ggttcagggt gtgaattccc agtgccactc 350
```

144

atctcccatc tccagtaaat gtgaaagcag aagacgtttt ccctgagaag 400

acatagaaag aaaatcaact ttcactaagg catctcagaa acataggcta 450

aggtaatatg tgtaccagta gagaagcctg aggaatttac aaaatgatgc 500

agctccaagc cattgtatgg cccatgtggg agactgatgg gacatggaga 550

atgacagtag attatcagga aataaataaa gtggtttttc caatgtacac 600

acctgtaaaa 610

<210> 136
<211> 119
<212> PRT
<213> Homo sapiens

<400> 136

```
Met Val Pro Arg Ile Phe Ala Pro Ala Tyr Val Ser Val Cys Leu
 1               5                  10                  15

Leu Leu Leu Cys Pro Arg Glu Val Ile Ala Pro Ala Gly Ser Glu
                20                  25                  30

Pro Trp Leu Cys Gln Pro Ala Pro Arg Cys Gly Asp Lys Ile Tyr
                35                  40                  45

Asn Pro Leu Glu Gln Cys Cys Tyr Asn Asp Ala Ile Val Ser Leu
                50                  55                  60

Ser Glu Thr Arg Gln Cys Gly Pro Pro Cys Thr Phe Trp Pro Cys
                65                  70                  75

Phe Glu Leu Cys Cys Leu Asp Ser Phe Gly Leu Thr Asn Asp Phe
                80                  85                  90

Val Val Lys Leu Lys Val Gln Gly Val Asn Ser Gln Cys His Ser
                95                  100                 105

Ser Pro Ile Ser Ser Lys Cys Glu Ser Arg Arg Arg Phe Pro
                110                 115
```

<210> 137
<211> 771
<212> DNA
<213> Homo sapiens

<400> 137

ctccactgca accacccaga gccatggctc cccgaggctg catcgtagct 50

gtctttgcca ttttctgcat ctccaggctc ctctgctcac acggagcccc 100

agtggccccc atgactcctt acctgatgct gtgccagcca cacaagagat 150

gtggggacaa gttctacgac cccctgcagc actgttgcta tgatgatgcc 200

gtcgtgccct tggccaggac ccagacgtgt ggaaactgca ccttcagagt 250

145

```
ctgctttgag cagtgctgcc cctggacctt catggtgaag ctgataaacc 300

agaactgcga ctcagcccgg acctcggatg acaggctttg tcgcagtgtc 350

agctaatgga acatcagggg aacgatgact cctggattct ccttcctggg 400

tgggcctgga gaaagaggct ggtgttacct gagatctggg atgctgagtg 450

gctgtttggg ggccagagaa acacacactc aactgcccac ttcattctgt 500

gacctgtctg aggcccaccc tgcagctgcc ctgaggaggc ccacaggtcc 550

ccttctagaa ttctggacag catgagatgc gtgtgctgat gggggcccag 600

ggactctgaa ccctcctgat gacccctatg ccaacatca acccggcacc 650

accccaaggc tggctgggga acccttcacc cttctgtgag attttccatc 700

atctcaagtt ctcttctatc caggagcaaa gcacaggatc ataataaatt 750

tatgtacttt ataaatgaaa a 771
```

<210> 138
<211> 110
<212> PRT
<213> Homo sapiens.

<400> 138

```
Met Ala Pro Arg Gly Cys Ile Val Ala Val Phe Ala Ile Phe Cys
1               5               10              15

Ile Ser Arg Leu Leu Cys Ser His Gly Ala Pro Val Ala Pro Met
                20              25              30

Thr Pro Tyr Leu Met Leu Cys Gln Pro His Lys Arg Cys Gly Asp
                35              40              45

Lys Phe Tyr Asp Pro Leu Gln His Cys Cys Tyr Asp Asp Ala Val
                50              55              60

Val Pro Leu Ala Arg Thr Gln Thr Cys Gly Asn Cys Thr Phe Arg
                65              70              75

Val Cys Phe Glu Gln Cys Cys Pro Trp Thr Phe Met Val Lys Leu
                80              85              90

Ile Asn Gln Asn Cys Asp Ser Ala Arg Thr Ser Asp Asp Arg Leu
                95              100             105

Cys Arg Ser Val Ser
                110
```

<210> 139
<211> 2044
<212> DNA
<213> Homo sapiens

<400> 139

146

gctcgcactc agtcgcggga ggcttccccg cgccggccgc gtcccgcccg 100

ctccccggca ccagaagttc ctctgcgcgt ccgacggcga catgggcgtc 150

cccacggccc tggaggccgg cagctggcgc tggggatccc tgctcttcgc 200

tctcttcctg gctgcgtccc taggtccggt ggcagccttc aaggtcgcca 250

cgccgtattc cctgtatgtc tgtcccgagg ggcagaacgt caccctcacc 300

tgcaggctct tgggccctgt ggacaaaggg cacgatgtga ccttctacaa 350

gacgtggtac cgcagctcga ggggcgaggt gcagacctgc tcagagcgcc 400

ggcccatccg caacctcacg ttccaggacc ttcacctgca ccatggaggc 450

caccaggctg ccaacaccag ccacgacctg gctcagcgcc acgggctgga 500

gtcggcctcc gaccaccatg gcaacttctc catcaccatg cgcaacctga 550

ccctgctgga tagcggcctc tactgctgcc tggtggtgga gatcaggcac 600

caccactcgg agcacagggt ccatggtgcc atggagctgc aggtgcagac 650

aggcaaagat gcaccatcca actgtgtggt gtacccatcc tcctcccagg 700

atagtgaaaa catcacggct gcagccctgg ctacgggtgc ctgcatcgta 750

ggaatcctct gcctccccct catcctgctc ctggtctaca agcaaaggca 800

ggcagcctcc aaccgccgtg cccaggagct ggtgcggatg gacagcaaca 850

ttcaagggat tgaaaacccc ggctttgaag cctcaccacc tgcccagggg 900

atacccgagg ccaaagtcag gcacccctg tcctatgtgg cccagcggca 950

gccttctgag tctgggcggc atctgctttc ggagcccagc accccctgt 1000

ctcctccagg ccccggagac gtcttcttcc catccctgga ccctgtccct 1050

gactctccaa actttgaggt catctagccc agctggggga cagtgggctg 1100

ttgtggctgg gtctggggca ggtgcatttg agccagggct ggctctgtga 1150

gtggcctcct tggcctcggc cctggttccc tccctcctgc tctgggctca 1200

gatactgtga catcccagaa gcccagcccc tcaacccctc tggatgctac 1250

atggggatgc tggacggctc agcccctgtt ccaaggattt tggggtgctg 1300

agattctccc ctagagacct gaaattcacc agctacagat gccaaatgac 1350

ttacatctta agaagtctca gaacgtccag cccttcagca gctctcgttc 1400

tgagacatga gccttgggat gtggcagcat cagtgggaca agatggacac 1450

```
tgggccaccc tcccaggcac cagacacagg gcacggtgga gagacttctc 1500

ccccgtggcc gccttggctc ccccgttttg cccgaggctg ctcttctgtc 1550

agacttcctc tttgtaccac agtggctctg gggccaggcc tgcctgccca 1600

ctggccatcg ccaccttccc cagctgcctc ctaccagcag tttctctgaa 1650

gatctgtcaa caggttaagt caatctgggg cttccactgc ctgcattcca 1700

gtccccagag cttggtggtc ccgaaacggg aagtacatat tggggcatgg 1750

tggcctccgt gagcaaatgg tgtcttgggc aatctgaggc caggacagat 1800

gttgccccac ccactggaga tggtgctgag ggaggtgggt ggggccttct 1850

gggaaggtga gtggagaggg gcacctgccc cccgccctcc ccatcccta 1900

ctcccactgc tcagcgcggg ccattgcaag ggtgccacac aatgtcttgt 1950

ccaccctggg acacttctga gtatgaagcg ggatgctatt aaaaactaca 2000

tggggaaaaa aaaaaaaaa aaaaaaaaa aaaaaaaaa aaga 2044
```

<210> 140
<211> 311
<212> PRT
<213> Homo sapiens

<400> 140

```
Met Gly Val Pro Thr Ala Leu Glu Ala Gly Ser Trp Arg Trp Gly
 1               5                  10                  15

Ser Leu Leu Phe Ala Leu Phe Leu Ala Ala Ser Leu Gly Pro Val
                20                  25                  30

Ala Ala Phe Lys Val Ala Thr Pro Tyr Ser Leu Tyr Val Cys Pro
                35                  40                  45

Glu Gly Gln Asn Val Thr Leu Thr Cys Arg Leu Leu Gly Pro Val
                50                  55                  60

Asp Lys Gly His Asp Val Thr Phe Tyr Lys Thr Trp Tyr Arg Ser
                65                  70                  75

Ser Arg Gly Glu Val Gln Thr Cys Ser Glu Arg Arg Pro Ile Arg
                80                  85                  90

Asn Leu Thr Phe Gln Asp Leu His Leu His His Gly Gly His Gln
                95                 100                 105

Ala Ala Asn Thr Ser His Asp Leu Ala Gln Arg His Gly Leu Glu
               110                 115                 120

Ser Ala Ser Asp His His Gly Asn Phe Ser Ile Thr Met Arg Asn
               125                 130                 135

Leu Thr Leu Leu Asp Ser Gly Leu Tyr Cys Cys Leu Val Val Glu
```

148

```
              140                    145                    150
Ile Arg His His His Ser Glu His Arg Val His Gly Ala Met Glu
              155                    160                    165
Leu Gln Val Gln Thr Gly Lys Asp Ala Pro Ser Asn Cys Val Val
              170                    175                    180
Tyr Pro Ser Ser Ser Gln Asp Ser Glu Asn Ile Thr Ala Ala Ala
              185                    190                    195
Leu Ala Thr Gly Ala Cys Ile Val Gly Ile Leu Cys Leu Pro Leu
              200                    205                    210
Ile Leu Leu Leu Val Tyr Lys Gln Arg Gln Ala Ala Ser Asn Arg
              215                    220                    225
Arg Ala Gln Glu Leu Val Arg Met Asp Ser Asn Ile Gln Gly Ile
              230                    235                    240
Glu Asn Pro Gly Phe Glu Ala Ser Pro Pro Ala Gln Gly Ile Pro
              245                    250                    255
Glu Ala Lys Val Arg His Pro Leu Ser Tyr Val Ala Gln Arg Gln
              260                    265                    270
Pro Ser Glu Ser Gly Arg His Leu Leu Ser Glu Pro Ser Thr Pro
              275                    280                    285
Leu Ser Pro Pro Gly Pro Gly Asp Val Phe Phe Pro Ser Leu Asp
              290                    295                    300
Pro Val Pro Asp Ser Pro Asn Phe Glu Val Ile
              305                    310
```

<210> 141
<211> 1732
<212> DNA
<213> Homo sapiens

<400> 141

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 cccacgcgtc cgcgcctctc ccttctgctg gaccttcctt cgtctctcca 50

 tctctccctc ctttccccgc gttctctttc cacctttctc ttcttcccac 100

 cttagacctc ccttcctgcc ctcctttcct gcccaccgct gcttcctggc 150

 ccttctccga ccccgctcta gcagcagacc tcctggggtc tgtgggttga 200

 tctgtggccc ctgtgcctcc gtgtcctttt cgtctccctt cctcccgact 250

 ccgctcccgg accagcggcc tgaccctggg gaaaggatgg ttcccgaggt 300

 gagggtcctc tcctccttgc tgggactcgc gctgctctgg ttccccctgg 350

 actcccacgc tcgagcccgc ccagacatgt tctgcctttt ccatgggaag 400

 agatactccc ccggcgagag ctggcacccc tacttggagc cacaaggcct 450
```

149

```
gatgtactgc ctgcgctgta cctgctcaga gggcgcccat gtgagttgtt 500

accgcctcca ctgtccgcct gtccactgcc cccagcctgt gacggagcca 550

cagcaatgct gtcccaagtg tgtggaacct cacactccct ctggactccg 600

ggccccacca aagtcctgcc agcacaacgg gaccatgtac caacacggag 650

agatcttcag tgcccatgag ctgttcccct cccgcctgcc caaccagtgt 700

gtcctctgca gctgcacaga gggccagatc tactgcggcc tcacaacctg 750

ccccgaacca ggctgcccag caccctccc actgccagac tcctgctgcc 800

aagcctgcaa agatgaggca agtgagcaat cggatgaaga ggacagtgtg 850

cagtcgctcc atggggtgag acatcctcag gatccatgtt ccagtgatgc 900

tgggagaaag agaggcccgg gcaccccagc ccccactggc ctcagcgccc 950

ctctgagctt catccctcgc cacttcagac ccaagggagc aggcagcaca 1000

actgtcaaga tcgtcctgaa ggagaaacat aagaaagcct gtgtgcatgg 1050

cgggaagacg tactcccacg gggaggtgtg gcacccggcc ttccgtgcct 1100

tcggcccctt gccctgcatc ctatgcacct gtgaggatgg ccgccaggac 1150

tgccagcgtg tgacctgtcc caccgagtac ccctgccgtc accccgagaa 1200

agtggctggg aagtgctgca agatttgccc agaggacaaa gcagaccctg 1250

gccacagtga gatcagttct accaggtgtc ccaaggcacc gggccgggtc 1300

ctcgtccaca catcggtatc cccaagccca gacaacctgc gtcgctttgc 1350

cctggaacac gaggcctcgg acttggtgga gatctacctc tggaagctgg 1400

taaaagatga ggaaactgag gctcagagag gtgaagtacc tggcccaagg 1450

ccacacagcc agaatcttcc acttgactca gatcaagaaa gtcaggaagc 1500

aagacttcca gaaagaggca cagcacttcc gactgctcgc tggcccccac 1550

gaaggtcact ggaacgtctt cctagcccag accctggagc tgaaggtcac 1600

ggccagtcca gacaaagtga ccaagacata acaaagacct aacagttgca 1650

gatatgagct gtataattgt tgttattata tattaataaa taagaagttg 1700

cattaccctc aaaaaaaaaa aaaaaaaaaa aa 1732
```

<210> 142
<211> 451
<212> PRT
<213> Homo sapiens

<400> 142

150

```
Met Val Pro Glu Val Arg Val Leu Ser Ser Leu Leu Gly Leu Ala
 1               5                10                    15

Leu Leu Trp Phe Pro Leu Asp Ser His Ala Arg Ala Arg Pro Asp
            20              25                    30

Met Phe Cys Leu Phe His Gly Lys Arg Tyr Ser Pro Gly Glu Ser
            35              40                    45

Trp His Pro Tyr Leu Glu Pro Gln Gly Leu Met Tyr Cys Leu Arg
            50              55                    60

Cys Thr Cys Ser Glu Gly Ala His Val Ser Cys Tyr Arg Leu His
            65              70                    75

Cys Pro Pro Val His Cys Pro Gln Pro Val Thr Glu Pro Gln Gln
            80              85                    90

Cys Cys Pro Lys Cys Val Glu Pro His Thr Pro Ser Gly Leu Arg
            95              100                   105

Ala Pro Pro Lys Ser Cys Gln His Asn Gly Thr Met Tyr Gln His
            110             115                   120

Gly Glu Ile Phe Ser Ala His Glu Leu Phe Pro Ser Arg Leu Pro
            125             130                   135

Asn Gln Cys Val Leu Cys Ser Cys Thr Glu Gly Gln Ile Tyr Cys
            140             145                   150

Gly Leu Thr Thr Cys Pro Glu Pro Gly Cys Pro Ala Pro Leu Pro
            155             160                   165

Leu Pro Asp Ser Cys Cys Gln Ala Cys Lys Asp Glu Ala Ser Glu
            170             175                   180

Gln Ser Asp Glu Glu Asp Ser Val Gln Ser Leu His Gly Val Arg
            185             190                   195

His Pro Gln Asp Pro Cys Ser Ser Asp Ala Gly Arg Lys Arg Gly
            200             205                   210

Pro Gly Thr Pro Ala Pro Thr Gly Leu Ser Ala Pro Leu Ser Phe
            215             220                   225

Ile Pro Arg His Phe Arg Pro Lys Gly Ala Gly Ser Thr Thr Val
            230             235                   240

Lys Ile Val Leu Lys Glu Lys His Lys Lys Ala Cys Val His Gly
            245             250                   255

Gly Lys Thr Tyr Ser His Gly Glu Val Trp His Pro Ala Phe Arg
            260             265                   270

Ala Phe Gly Pro Leu Pro Cys Ile Leu Cys Thr Cys Glu Asp Gly
            275             280                   285

Arg Gln Asp Cys Gln Arg Val Thr Cys Pro Thr Glu Tyr Pro Cys
```

151

```
                    290                    295            ·       300
     Arg His Pro Glu Lys Val Ala Gly Lys Cys Cys Lys Ile Cys Pro
                    305                    310                    315
     Glu Asp Lys Ala Asp Pro Gly His Ser Glu Ile Ser Ser Thr Arg
                    320                    325                    330
     Cys Pro Lys Ala Pro Gly Arg Val Leu Val His Thr Ser Val Ser
                    335                    340                    345
     Pro Ser Pro Asp Asn Leu Arg Arg Phe Ala Leu Glu His Glu Ala
                    350                    355                    360
     Ser Asp Leu Val Glu Ile Tyr Leu Trp Lys Leu Val Lys Asp Glu
                    365                    370                    375
     Glu Thr Glu Ala Gln Arg Gly Glu Val Pro Gly Pro Arg Pro His
                    380                    385                    390
     Ser Gln Asn Leu Pro Leu Asp Ser Asp Gln Glu Ser Gln Glu Ala
                    395                    400                    405
     Arg Leu Pro Glu Arg Gly Thr Ala Leu Pro Thr Ala Arg Trp Pro
                    410                    415                    420
     Pro Arg Arg Ser Leu Glu Arg Leu Pro Ser Pro Asp Pro Gly Ala
                    425                    430                    435
     Glu Gly His Gly Gln Ser Arg Gln Ser Asp Gln Asp Ile Thr Lys
                    440                    445                    450
     Thr
```

<210> 143
<211> 693
<212> DNA
<213> Homo sapiens

<400> 143

```
 ctagcctgcg ccaagggggta gtgagaccgc gcggcaacag cttgcggctg 50

 cggggagctc ccgtgggcgc tccgctggct gtgcaggcgg ccatggattc 100

 cttgcggaaa atgctgatct cagtcgcaat gctgggcgca ggggctggcg 150

 tgggctacgc gctcctcgtt atcgtgaccc cgggagagcg gcggaagcag 200

 gaaatgctaa aggagatgcc actgcaggac ccaaggagca gggaggaggc 250

 ggccaggacc cagcagctat tgctggccac tctgcaggag gcagcgacca 300

 cgcaggagaa cgtggcctgg aggaagaact ggatggttgg cggcgaaggc 350

 ggcgccagcg ggaggtcacc gtgagaccgg acttgcctcc gtgggcgccg 400

 gaccttggct tgggcgcagg aatccgaggc agcctttctc cttcgtgggc 450
```

152

ccagcggaga gtccggaccg agataccatg ccaggactct ccggggtcct 500

gtgagctgcc gtcgggtgag cacgtttccc ccaaaccctg gactgactgc 550

tttaaggtcc gcaaggcggg ccagggccga gacgcgagtc ggatgtggtg 600

aactgaaaga accaataaaa tcatgttcct ccaaaaaaaa aaaaaaaaaa 650

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 693

<210> 144
<211> 93
<212> PRT
<213> Homo sapiens

<400> 144
```
Met Asp Ser Leu Arg Lys Met Leu Ile Ser Val Ala Met Leu Gly
 1               5                  10                  15

Ala Gly Ala Gly Val Gly Tyr Ala Leu Leu Val Ile Val Thr Pro
                20                  25                  30

Gly Glu Arg Arg Lys Gln Glu Met Leu Lys Glu Met Pro Leu Gln
                35                  40                  45

Asp Pro Arg Ser Arg Glu Glu Ala Ala Arg Thr Gln Gln Leu Leu
                50                  55                  60

Leu Ala Thr Leu Gln Glu Ala Ala Thr Thr Gln Glu Asn Val Ala
                65                  70                  75

Trp Arg Lys Asn Trp Met Val Gly Gly Glu Gly Gly Ala Ser Gly
                80                  85                  90

Arg Ser Pro
```

<210> 145
<211> 1883
<212> DNA
<213> Homo sapiens

<400> 145

caggagagaa ggcaccgccc ccacccccgcc tccaaagcta accctcgggc 50

ttgaggggaa gaggctgact gtacgttcct tctactctgg caccactctc 100

caggctgcca tggggcccag caccccctctc ctcatcttgt tccttttgtc 150

atggtcggga cccctccaag gacagcagca ccaccttgtg gagtacatgg 200

aacgccgact agctgcttta gaggaacggc tggcccagtg ccaggaccag 250

agtagtcggc atgctgctga gctgcgggac ttcaagaaca gatgctgcc 300

actgctggag gtggcagaga aggagcggga ggcactcaga actgaggccg 350

acaccatctc cgggagagtg gatcgtctgg agcgggaggt agactatctg 400

153

```
gagacccaga  acccagctct  gccctgtgta  gagtttgatg  agaaggtgac  450

tggaggccct  gggaccaaag  gcaagggaag  aaggaatgag  aagtacgata  500

tggtgacaga  ctgtggctac  acaatctctc  aagtgagatc  aatgaagatt  550

ctgaagcgat  ttggtggccc  agctggtcta  tggaccaagg  atccactggg  600

gcaaacagag  aagatctacg  tgttagatgg  gacacagaat  gacacagcct  650

ttgtcttccc  aaggctgcgt  gacttcaccc  ttgccatggc  tgcccggaaa  700

gcttcccgag  tccgggtgcc  cttcccctgg  gtaggcacag  ggcagctggt  750

atatggtggc  tttctttatt  ttgctcggag  gcctcctgga  agacctggtg  800

gaggtggtga  gatggagaac  actttgcagc  taatcaaatt  ccacctggca  850

aaccgaacag  tggtggacag  ctcagtattc  ccagcagagg  ggctgatccc  900

cccctacggc  ttgacagcag  acacctacat  cgacctggta  gctgatgagg  950

aaggtctttg  ggctgtctat  gccacccggg  aggatgacag  gcacttgtgt  1000

ctggccaagt  tagatccaca  gacactggac  acagagcagc  agtgggacac  1050

accatgtccc  agagagaatg  ctgaggctgc  ctttgtcatc  tgtgggaccc  1100

tctatgtcgt  ctataacacc  cgtcctgcca  gtcgggcccg  catccagtgc  1150

tcctttgatg  ccagcggcac  cctgaccccct  gaacgggcag  cactcccttа  1200

ttttcccccgc  agatatggtg  cccatgccag  cctccgctat  aacccccgag  1250

aacgccagct  ctatgcctgg  gatgatggct  accagattgt  ctataagctg  1300

gagatgagga  agaaagagga  ggaggtttga  ggagctagcc  ttgttttttg  1350

catctttctc  actcccatac  atttatatta  tatccccact  aaatttcttg  1400

ttcctcattc  ttcaaatgtg  ggccagttgt  ggctcaaatc  ctctatattt  1450

ttagccaatg  gcaatcaaat  tctttcagct  cctttgtttc  atacggaact  1500

ccagatcctg  agtaatcctt  ttagagcccg  aagagtcaaa  accctcaatg  1550

ttccctcctg  ctctcctgcc  ccatgtcaac  aaatttcagg  ctaaggatgc  1600

cccagaccca  gggctctaac  cttgtatgcg  ggcaggccca  gggagcaggc  1650

agcagtgttc  ttcccctcag  agtgacttgg  ggagggagaa  ataggaggag  1700

acgtccagct  ctgtcctctc  ttcctcactc  ctcccttcag  tgtcctgagg  1750

aacaggactt  tctccacatt  gttttgtatt  gcaacatttt  gcattaaaag  1800

gaaaatccac  aaaaaaaaaa  aaaaaaaaaa  aaaaaaaaaa  aaaaaaaaaa  1850
```

154

<210> 146
<211> 406
<212> PRT
<213> Homo sapiens

<400> 146

```
Met Gly Pro Ser Thr Pro Leu Leu Ile Leu Phe Leu Leu Ser Trp
 1               5                  10                      15

Ser Gly Pro Leu Gln Gly Gln Gln His His Leu Val Glu Tyr Met
                20                  25                      30

Glu Arg Arg Leu Ala Ala Leu Glu Glu Arg Leu Ala Gln Cys Gln
                35                  40                      45

Asp Gln Ser Ser Arg His Ala Ala Glu Leu Arg Asp Phe Lys Asn
                50                  55                      60

Lys Met Leu Pro Leu Leu Glu Val Ala Glu Lys Glu Arg Glu Ala
                65                  70                      75

Leu Arg Thr Glu Ala Asp Thr Ile Ser Gly Arg Val Asp Arg Leu
                80                  85                      90

Glu Arg Glu Val Asp Tyr Leu Glu Thr Gln Asn Pro Ala Leu Pro
                95                  100                     105

Cys Val Glu Phe Asp Glu Lys Val Thr Gly Gly Pro Gly Thr Lys
                110                 115                     120

Gly Lys Gly Arg Arg Asn Glu Lys Tyr Asp Met Val Thr Asp Cys
                125                 130                     135

Gly Tyr Thr Ile Ser Gln Val Arg Ser Met Lys Ile Leu Lys Arg
                140                 145                     150

Phe Gly Gly Pro Ala Gly Leu Trp Thr Lys Asp Pro Leu Gly Gln
                155                 160                     165

Thr Glu Lys Ile Tyr Val Leu Asp Gly Thr Gln Asn Asp Thr Ala
                170                 175                     180

Phe Val Phe Pro Arg Leu Arg Asp Phe Thr Leu Ala Met Ala Ala
                185                 190                     195

Arg Lys Ala Ser Arg Val Arg Val Pro Phe Pro Trp Val Gly Thr
                200                 205                     210

Gly Gln Leu Val Tyr Gly Gly Phe Leu Tyr Phe Ala Arg Arg Pro
                215                 220                     225

Pro Gly Arg Pro Gly Gly Gly Gly Glu Met Glu Asn Thr Leu Gln
                230                 235                     240

Leu Ile Lys Phe His Leu Ala Asn Arg Thr Val Val Asp Ser Ser
                245                 250                     255
```

155

```
Val Phe Pro Ala Glu Gly Leu Ile Pro Pro Tyr Gly Leu Thr Ala
                260                 265                 270

Asp Thr Tyr Ile Asp Leu Val Ala Asp Glu Glu Gly Leu Trp Ala
                275                 280                 285

Val Tyr Ala Thr Arg Glu Asp Asp Arg His Leu Cys Leu Ala Lys
                290                 295                 300

Leu Asp Pro Gln Thr Leu Asp Thr Glu Gln Gln Trp Asp Thr Pro
                305                 310                 315

Cys Pro Arg Glu Asn Ala Glu Ala Ala Phe Val Ile Cys Gly Thr
                320                 325                 330

Leu Tyr Val Val Tyr Asn Thr Arg Pro Ala Ser Arg Ala Arg Ile
                335                 340                 345

Gln Cys Ser Phe Asp Ala Ser Gly Thr Leu Thr Pro Glu Arg Ala
                350                 355                 360

Ala Leu Pro Tyr Phe Pro Arg Arg Tyr Gly Ala His Ala Ser Leu
                365                 370                 375

Arg Tyr Asn Pro Arg Glu Arg Gln Leu Tyr Ala Trp Asp Asp Gly
                380                 385                 390

Tyr Gln Ile Val Tyr Lys Leu Glu Met Arg Lys Lys Glu Glu Glu
                395                 400                 405

Val
```

<210> 147
<211> 2052
<212> DNA
<213> Homo sapiens

<400> 147

```
gacagctgtg tctcgatgga gtagactctc agaacagcgc agtttgccct 50

ccgctcacgc agagcctctc cgtggcttcc gcaccttgag cattaggcca 100

gttctcctct tctctctaat ccatccgtca cctctcctgt catccgtttc 150

catgccgtga ggtccattca cagaacacat ccatggctct catgctcagt 200

ttggttctga gtctcctcaa gctgggatca gggcagtggc aggtgtttgg 250

gccagacaag cctgtccagg ccttggtggg ggaggacgca gcattctcct 300

gtttcctgtc tcctaagacc aatgcagagg ccatggaagt gcggttcttc 350

aggggccagt tctctagcgt ggtccacctc tacagggacg gaaggacca 400

gccatttatg cagatgccac agtatcaagg caggacaaaa ctggtgaagg 450

attctattgc ggagggcgc atctctctga ggctggaaaa cattactgtg 500
```

```
ttggatgctg gcctctatgg gtgcaggatt agttcccagt cttactacca 550

gaaggccatc tgggagctac aggtgtcagc actgggctca gttcctctca 600

tttccatcac gggatatgtt gatagagaca tccagctact ctgtcagtcc 650

tcgggctggt tcccccggcc cacagcgaag tggaaaggtc cacaaggaca 700

ggatttgtcc acagactcca ggacaaacag agacatgcat ggcctgtttg 750

atgtggagat ctctctgacc gtccaagaga cgccgggag catatcctgt 800

tccatgcggc atgctcatct gagccgagag gtggaatcca gggtacagat 850

aggagatacc tttttcgagc ctatatcgtg gcacctggct accaaagtac 900

tgggaatact ctgctgtggc ctattttttg gcattgttgg actgaagatt 950

ttcttctcca aattccagtg gaaaatccag gcggaactgg actggagaag 1000

aaagcacgga caggcagaat tgagagacgc ccggaaacac gcagtggagg 1050

tgactctgga tccagagacg gctcacccga agctctgcgt ttctgatctg 1100

aaaactgtaa cccatagaaa agctccccag gaggtgcctc actctgagaa 1150

gagatttaca aggaagagtg tggtggcttc tcagagtttc caagcaggga 1200

aacattactg ggaggtggac ggaggacaca ataaaaggtg gcgcgtggga 1250

gtgtgccggg atgatgtgga caggaggaag gagtacgtga ctttgtctcc 1300

cgatcatggg tactgggtcc tcagactgaa tggagaacat ttgtatttca 1350

cattaaatcc ccgttttatc agcgtcttcc ccaggacccc acctacaaaa 1400

ataggggtct tcctggacta tgagtgtggg accatctcct tcttcaacat 1450

aaatgaccag tcccttattt taccctgac atgtcggttt gaaggcttat 1500

tgaggcccta cattgagtat ccgtcctata atgagcaaaa tggaactccc 1550

atagtcatct gcccagtcac ccaggaatca gagaaagagg cctcttggca 1600

aagggcctct gcaatcccag agacaagcaa cagtgagtcc tcctcacagg 1650

caaccacgcc cttcctcccc aggggtgaaa tgtaggatga atcacatccc 1700

acattcttct ttagggatat taaggtctct ctcccagatc caaagtcccg 1750

cagcagccgg ccaaggtggc ttccagatga agggggactg gcctgtccac 1800

atgggagtca ggtgtcatgg ctgccctgag ctgggaggga agaaggctga 1850

cattacattt agtttgctct cactccatct ggctaagtga tcttgaaata 1900

ccacctctca ggtgaagaac cgtcaggaat tcccatctca caggctgtgg 1950
```

157

```
tgtagattaa gtagacaagg aatgtgaata atgcttagat cttattgatg 2000

acagagtgta tcctaatggt ttgttcatta tattacactt tcagtaaaaa 2050

aa 2052
```

<210> 148
<211> 500
<212> PRT
<213> Homo sapiens

<400> 148

```
Met Ala Leu Met Leu Ser Leu Val Leu Ser Leu Leu Lys Leu Gly
  1               5                  10                  15

Ser Gly Gln Trp Gln Val Phe Gly Pro Asp Lys Pro Val Gln Ala
                20              25                  30

Leu Val Gly Glu Asp Ala Ala Phe Ser Cys Phe Leu Ser Pro Lys
                35              40                  45

Thr Asn Ala Glu Ala Met Glu Val Arg Phe Phe Arg Gly Gln Phe
                50              55                  60

Ser Ser Val Val His Leu Tyr Arg Asp Gly Lys Asp Gln Pro Phe
                65              70                  75

Met Gln Met Pro Gln Tyr Gln Gly Arg Thr Lys Leu Val Lys Asp
                80              85                  90

Ser Ile Ala Glu Gly Arg Ile Ser Leu Arg Leu Glu Asn Ile Thr
                95                 100                 105

Val Leu Asp Ala Gly Leu Tyr Gly Cys Arg Ile Ser Ser Gln Ser
               110                 115                 120

Tyr Tyr Gln Lys Ala Ile Trp Glu Leu Gln Val Ser Ala Leu Gly
               125                 130                 135

Ser Val Pro Leu Ile Ser Ile Thr Gly Tyr Val Asp Arg Asp Ile
               140                 145                 150

Gln Leu Leu Cys Gln Ser Ser Gly Trp Phe Pro Arg Pro Thr Ala
               155                 160                 165

Lys Trp Lys Gly Pro Gln Gly Gln Asp Leu Ser Thr Asp Ser Arg
               170                 175                 180

Thr Asn Arg Asp Met His Gly Leu Phe Asp Val Glu Ile Ser Leu
               185                 190                 195

Thr Val Gln Glu Asn Ala Gly Ser Ile Ser Cys Ser Met Arg His
               200                 205                 210

Ala His Leu Ser Arg Glu Val Glu Ser Arg Val Gln Ile Gly Asp
               215                 220                 225

Thr Phe Phe Glu Pro Ile Ser Trp His Leu Ala Thr Lys Val Leu
```

158

```
                  230            ·        235                240
Gly Ile Leu Cys Cys Gly Leu Phe Phe Gly Ile Val Gly Leu Lys
                  245                    250                255
Ile Phe Phe Ser Lys Phe Gln Trp Lys Ile Gln Ala Glu Leu Asp
                  260                    265                270
Trp Arg Arg Lys His Gly Gln Ala Glu Leu Arg Asp Ala Arg Lys
                  275                    280                285
His Ala Val Glu Val Thr Leu Asp Pro Glu Thr Ala His Pro Lys
                  290                    295                300
Leu Cys Val Ser Asp Leu Lys Thr Val Thr His Arg Lys Ala Pro
                  305                    310                315
Gln Glu Val Pro His Ser Glu Lys Arg Phe Thr Arg Lys Ser Val
                  320                    325                330
Val Ala Ser Gln Ser Phe Gln Ala Gly Lys His Tyr Trp Glu Val
                  335                    340                345
Asp Gly Gly His Asn Lys Arg Trp Arg Val Gly Val Cys Arg Asp
                  350                    355                360
Asp Val Asp Arg Arg Lys Glu Tyr Val Thr Leu Ser Pro Asp His
                  365                    370                375
Gly Tyr Trp Val Leu Arg Leu Asn Gly Glu His Leu Tyr Phe Thr
                  380                    385                390
Leu Asn Pro Arg Phe Ile Ser Val Phe Pro Arg Thr Pro Pro Thr
                  395                    400                405
Lys Ile Gly Val Phe Leu Asp Tyr Glu Cys Gly Thr Ile Ser Phe
                  410                    415                420
Phe Asn Ile Asn Asp Gln Ser Leu Ile Tyr Thr Leu Thr Cys Arg
                  425                    430                435
Phe Glu Gly Leu Leu Arg Pro Tyr Ile Glu Tyr Pro Ser Tyr Asn
                  440                    445                450
Glu Gln Asn Gly Thr Pro Ile Val Ile Cys Pro Val Thr Gln Glu
                  455                    460                465
Ser Glu Lys Glu Ala Ser Trp Gln Arg Ala Ser Ala Ile Pro Glu
                  470                    475                480
Thr Ser Asn Ser Glu Ser Ser Ser Gln Ala Thr Thr Pro Phe Leu
                  485                    490                495
Pro Arg Gly Glu Met
                  500
```

<210> 149
<211> 24

<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 149
 gcgtggtcca cctctacagg gacg 24

<210> 150
<211> 23
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-23
<223> Synthetic construct.

<400> 150
 ggaactgacc cagtgctgac acc 23

<210> 151
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45
<223> Synthetic construct.

<400> 151
 gcagatgcca cagtatcaag gcaggacaaa actggtgaag gattc 45

<210> 152
<211> 2294
<212> DNA
<213> Homo sapiens

<400> 152
 gcgatggtgc gcccggtggc ggtggcggcg gcggttgcgg aggcttcctt 50

 ggtcggattg caacgaggag aagatgactg accaaccgac tggctgaatg 100

 aatgaatggc ggagccgagc gcgccatgag gagcctgccg agcctgggcg 150

 gcctcgccct gttgtgctgc gccgccgccg ccgccgccgt cgcctcagcc 200

 gcctcggcgg ggaatgtcac cggtggcggc ggggccgcgg ggcaggtgga 250

 cgcgtcgccg ggccccgggt tgcggggcga gcccagccac cccttcccta 300

 gggcgacggc tcccacggcc caggccccga ggaccgggcc cccgcgcgcc 350

 accgtccacc gacccctggc tgcgacttct ccagcccagt ccccggagac 400

160

```
caccccctctt tgggcgactg ctggaccctc ttccaccacc tttcaggcgc 450

cgctcggccc ctcgccgacc acccctccgg cggcggaacg cacttcgacc 500

acctctcagg cgccgaccag acccgcgccg accacccttt cgacgaccac 550

tggcccggcg ccgaccaccc ctgtagcgac caccgtaccg gcgcccacga 600

ctccccggac cccgaccccc gatctcccca gcagcagcaa cagcagcgtc 650

ctccccaccc cacctgccac cgaggccccc tcttcgcctc ctccagagta 700

tgtatgtaac tgctctgtgg ttggaagcct gaatgtgaat cgctgcaacc 750

agaccacagg gcagtgtgag tgtcggccag gttatcaggg gcttcactgt 800

gaaacctgca aagagggctt ttacctaaat tacacttctg ggctctgtca 850

gccatgtgac tgtagtccac atggagctct cagcataccg tgcaacaggt 900

aagcaacaga gggtggaact gaagtttatt ttattttagc aagggaaaaa 950

aaaaggctgc tactctcaag gaccatactg gtttaaacaa aggaggatga 1000

gggtcataga tttacaaaat attttatata cttttattct cttactttat 1050

atgttatatt taatgtcagg atttaaaaac atctaattta ctgatttagt 1100

tcttcaaaag cactagagtc gccaattttt ctctgggata atttctgtaa 1150

atttcatggg aaaaaattat tgaagaataa atctgctttc tggaagggct 1200

ttcaggcatg aaacctgcta ggaggtttag aaatgttctt atgtttatta 1250

atataccatt ggagtttgag gaaatttgtt gtttggttta tttttctctc 1300

taatcaaaat tctacatttg tttctttgga catctaaagc ttaacctggg 1350

ggtaccctaa tttatttaac tagtggtaag tagactggtt ttactctatt 1400

taccagtaca tttttgagac caaaagtaga ttaagcagga attatcttta 1450

aactattatg ttatttggag gtaatttaat ctagtggaat aatgtactgt 1500

tatctaagca tttgccttgt actgcactga aagtaattat tctttgacct 1550

tatgtgaggc acttggcttt ttgtggaccc caagtcaaaa aactgaagag 1600

acagtattaa ataatgaaaa aaataatgac aggttatact cagtgtaacc 1650

tgggtataac ccaagatctg ctgccactta cgagctgtgt tccttgggca 1700

agtaatttcc tttcactgag cttgtttctt ctcaaggttg ttgtgaagat 1750

taaatgagtt gatatatata aaatgcctag cacatgtcac tcaataaatt 1800

ctggtttgtt ttaatttcaa aggaatatta tggactgaaa tgagagaaca 1850
```

161

```
tgttttaaga acttttagct ccttgacaaa gaagtgcttt atactttagc 1900

actaaatatt ttaaatgctt tataaatgat attatactgt tatggaatat 1950

tgtatcatat tgtagtttat taaaaatgta gaagaggctg ggcgcggtgg 2000

ctcacgcctg taatcctagc actttgggag gccaaggcgg gtggatcact 2050

tgaggccagg agttctagat gagcctggcc agcacagtga aaccccgtct 2100

ctactaaaaa tacaaacaaa ttagctgggc gtggtggcac acacctgtag 2150

tcccagctac tcgggaggct gaggcaggag aatcggttga acccgggagg 2200

tggaggttgc agtgagctga gatcgcgcca ctgcactcca gcctggtgag 2250

agagggagac tctgtcttaa aaaaaaaaaa aaaaaaaaaa aaaa 2294
```

<210> 153
<211> 258
<212> PRT
<213> Homo sapiens

<400> 153

```
Met Arg Ser Leu Pro Ser Leu Gly Gly Leu Ala Leu Leu Cys Cys
 1               5                  10                  15

Ala Ala Ala Ala Ala Ala Val Ala Ser Ala Ala Ser Ala Gly Asn
                20                  25                  30

Val Thr Gly Gly Gly Gly Ala Ala Gly Gln Val Asp Ala Ser Pro
                35                  40                  45

Gly Pro Gly Leu Arg Gly Glu Pro Ser His Pro Phe Pro Arg Ala
                50                  55                  60

Thr Ala Pro Thr Ala Gln Ala Pro Arg Thr Gly Pro Pro Arg Ala
                65                  70                  75

Thr Val His Arg Pro Leu Ala Ala Thr Ser Pro Ala Gln Ser Pro
                80                  85                  90

Glu Thr Thr Pro Leu Trp Ala Thr Ala Gly Pro Ser Ser Thr Thr
                95                 100                 105

Phe Gln Ala Pro Leu Gly Pro Ser Pro Thr Thr Pro Pro Ala Ala
               110                 115                 120

Glu Arg Thr Ser Thr Thr Ser Gln Ala Pro Thr Arg Pro Ala Pro
               125                 130                 135

Thr Thr Leu Ser Thr Thr Thr Gly Pro Ala Pro Thr Thr Pro Val
               140                 145                 150

Ala Thr Thr Val Pro Ala Pro Thr Thr Pro Arg Thr Pro Thr Pro
               155                 160                 165

Asp Leu Pro Ser Ser Ser Asn Ser Ser Val Leu Pro Thr Pro Pro
```

162

```
              170                        175                      180
  Ala Thr Glu Ala Pro Ser Ser Pro Pro Pro Glu Tyr Val Cys Asn
                  185                      190                      195
  Cys Ser Val Val Gly Ser Leu Asn Val Asn Arg Cys Asn Gln Thr
                  200                      205                      210
  Thr Gly Gln Cys Glu Cys Arg Pro Gly Tyr Gln Gly Leu His Cys
                  215                      220                      225
  Glu Thr Cys Lys Glu Gly Phe Tyr Leu Asn Tyr Thr Ser Gly Leu
                  230                      235                      240
  Cys Gln Pro Cys Asp Cys Ser Pro His Gly Ala Leu Ser Ile Pro
                  245                      250                      255
  Cys Asn Arg
```

<210> 154
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 154
 aactgctctg tggttggaag cctg 24

<210> 155
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 155
 cagtcacatg gctgacagac ccac 24

<210> 156
<211> 38
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-38
<223> Synthetic construct.

<400> 156
 aggttatcag gggcttcact gtgaaacctg caaagagg 38

<210> 157
<211> 689
<212> DNA
<213> Homo sapiens

<400> 157
tgcggcgcag tgtagacctg ggaggatggg cggcctgctg ctggctgctt 50

ttctggcttt ggtctcggtg cccagggccc aggccgtgtg gttgggaaga 100

ctggaccctg agcagcttct tgggccctgg tacgtgcttg cggtggcctc 150

ccgggaaaag ggctttgcca tggagaagga catgaagaac gtcgtggggg 200

tggtggtgac cctcactcca gaaaacaacc tgcggacgct gtcctctcag 250

cacgggctgg gagggtgtga ccagagtgtc atggacctga taaagcgaaa 300

ctccggatgg gtgtttgaga atccctcaat aggcgtgctg gagctctggg 350

tgctggccac caacttcaga gactatgcca tcatcttcac tcagctggag 400

ttcggggacg agcccttcaa caccgtggag ctgtacagtc tgacggagac 450

agccagccag gaggccatgg ggctcttcac caagtggagc aggagcctgg 500

gcttcctgtc acagtagcag gcccagctgc agaaggacct cacctgtgct 550

cacaagatcc ttctgtgagt gctgcgtccc cagtagggat ggcgcccaca 600

gggtcctgtg acctcggcca gtgtccaccc acctcgctca gcggctcccg 650

gggcccagca ccagctcaga ataaagcgat tccacagca 689

<210> 158
<211> 163
<212> PRT
<213> Homo sapiens

<400> 158

```
Met Gly Gly Leu Leu Leu Ala Ala Phe Leu Ala Leu Val Ser Val
 1               5                  10                  15

Pro Arg Ala Gln Ala Val Trp Leu Gly Arg Leu Asp Pro Glu Gln
                20                  25                  30

Leu Leu Gly Pro Trp Tyr Val Leu Ala Val Ala Ser Arg Glu Lys
                    35                  40                  45

Gly Phe Ala Met Glu Lys Asp Met Lys Asn Val Val Gly Val Val
                    50                  55                  60

Val Thr Leu Thr Pro Glu Asn Asn Leu Arg Thr Leu Ser Ser Gln
                    65                  70                  75

His Gly Leu Gly Gly Cys Asp Gln Ser Val Met Asp Leu Ile Lys
                    80                  85                  90
```

```
Arg Asn Ser Gly Trp Val Phe Glu Asn Pro Ser Ile Gly Val Leu
            95              100              105

Glu Leu Trp Val Leu Ala Thr Asn Phe Arg Asp Tyr Ala Ile Ile
            110              115              120

Phe Thr Gln Leu Glu Phe Gly Asp Glu Pro Phe Asn Thr Val Glu
            125              130              135

Leu Tyr Ser Leu Thr Glu Thr Ala Ser Gln Glu Ala Met Gly Leu
            140              145              150

Phe Thr Lys Trp Ser Arg Ser Leu Gly Phe Leu Ser Gln
            155              160
```

<210> 159
<211> 1665
<212> DNA
<213> Homo sapiens

<400> 159

```
aacagacgtt ccctcgcggc cctggcacct ctaaccccag acatgctgct 50

gctgctgctg cccctgctct gggggaggga gagggcggaa ggacagacaa 100

gtaaactgct gacgatgcag agttccgtga cggtgcagga aggcctgtgt 150

gtccatgtgc cctgctcctt ctcctacccc tcgcatggct ggatttaccc 200

tggcccagta gttcatggct actggttccg ggaaggggcc aatacagacc 250

aggatgctcc agtggccaca aacaacccag ctcgggcagt gtgggaggag 300

actcgggacc gattccacct ccttggggac ccacatacca agaattgcac 350

cctgagcatc agagatgcca gaagaagtga tgcggggaga tacttctttc 400

gtatggagaa aggaagtata aaatggaatt ataaacatca ccggctctct 450

gtgaatgtga cagccttgac ccacaggccc aacatcctca tcccaggcac 500

cctggagtcc ggctgccccc agaatctgac ctgctctgtg ccctgggcct 550

gtgagcaggg gacacccccct atgatctcct ggatagggac ctccgtgtcc 600

cccctggacc cctccaccac ccgctcctcg gtgctcaccc tcatcccaca 650

gccccaggac catggcacca gcctcacctg tcaggtgacc ttccctgggg 700

ccagcgtgac cacgaacaag accgtccatc tcaacgtgtc ctacccgcct 750

cagaacttga ccatgactgt cttccaagga cggcacag tatccacagt 800

cttgggaaat ggctcatctc tgtcactccc agagggccag tctctgcgcc 850

tggtctgtgc agttgatgca gttgacagca atcccccctgc caggctgagc 900

ctgagctgga gaggcctgac cctgtgcccc tcacagccct caaacccggg 950
```

```
ggtgctggag ctgccttggg tgcacctgag ggatgcagct gaattcacct 1000

gcagagctca gaaccctctc ggctctcagc aggtctacct gaacgtctcc 1050

ctgcagagca aagccacatc aggagtgact caggggggtgg tcgggggagc 1100

tggagccaca gccctggtct tcctgtcctt ctgcgtcatc ttcgttgtag 1150

tgaggtcctg caggaagaaa tcggcaaggc cagcagcggg cgtgggagat 1200

acgggcatag aggatgcaaa cgctgtcagg ggttcagcct ctcaggggcc 1250

cctgactgaa ccttgggcag aagacagtcc cccagaccag cctcccccag 1300

cttctgcccg ctcctcagtg ggggaaggag agctccagta tgcatccctc 1350

agcttccaga tggtgaagcc ttgggactcg cggggacagg aggccactga 1400

caccgagtac tcggagatca agatccacag atgagaaact gcagagactc 1450

accctgattg agggatcaca gcccctccag gcaagggaga agtcagaggc 1500

tgattcttgt agaattaaca gccctcaacg tgatgagcta tgataacact 1550

atgaattatg tgcagagtga aaagcacaca ggctttagag tcaaagtatc 1600

tcaaacctga atccacactg tgccctccct tttattttt taactaaaag 1650

acagacaaat tccta 1665
```

<210> 160
<211> 463
<212> PRT
<213> Homo sapiens

<400> 160

```
Met Leu Leu Leu Leu Leu Pro Leu Leu Trp Gly Arg Glu Arg Ala
 1               5                  10                  15

Glu Gly Gln Thr Ser Lys Leu Leu Thr Met Gln Ser Ser Val Thr
                20                  25                  30

Val Gln Glu Gly Leu Cys Val His Val Pro Cys Ser Phe Ser Tyr
                35                  40                  45

Pro Ser His Gly Trp Ile Tyr Pro Gly Pro Val Val His Gly Tyr
                50                  55                  60

Trp Phe Arg Glu Gly Ala Asn Thr Asp Gln Asp Ala Pro Val Ala
                65                  70                  75

Thr Asn Asn Pro Ala Arg Ala Val Trp Glu Glu Thr Arg Asp Arg
                80                  85                  90

Phe His Leu Leu Gly Asp Pro His Thr Lys Asn Cys Thr Leu Ser
                95                  100                 105

Ile Arg Asp Ala Arg Arg Ser Asp Ala Gly Arg Tyr Phe Phe Arg
```

166

```
                110                    115                   120
Met Glu Lys Gly Ser Ile Lys Trp Asn Tyr Lys His His Arg Leu
            125                   130                   135
Ser Val Asn Val Thr Ala Leu Thr His Arg Pro Asn Ile Leu Ile
            140                   145                   150
Pro Gly Thr Leu Glu Ser Gly Cys Pro Gln Asn Leu Thr Cys Ser
            155                   160                   165
Val Pro Trp Ala Cys Glu Gln Gly Thr Pro Pro Met Ile Ser Trp
            170                   175                   180
Ile Gly Thr Ser Val Ser Pro Leu Asp Pro Ser Thr Thr Arg Ser
            185                   190                   195
Ser Val Leu Thr Leu Ile Pro Gln Pro Gln Asp His Gly Thr Ser
            200                   205                   210
Leu Thr Cys Gln Val Thr Phe Pro Gly Ala Ser Val Thr Thr Asn
            215                   220                   225
Lys Thr Val His Leu Asn Val Ser Tyr Pro Pro Gln Asn Leu Thr
            230                   235                   240
Met Thr Val Phe Gln Gly Asp Gly Thr Val Ser Thr Val Leu Gly
            245                   250                   255
Asn Gly Ser Ser Leu Ser Leu Pro Glu Gly Gln Ser Leu Arg Leu
            260                   265                   270
Val Cys Ala Val Asp Ala Val Asp Ser Asn Pro Pro Ala Arg Leu
            275                   280                   285
Ser Leu Ser Trp Arg Gly Leu Thr Leu Cys Pro Ser Gln Pro Ser
            290                   295                   300
Asn Pro Gly Val Leu Glu Leu Pro Trp Val His Leu Arg Asp Ala
            305                   310                   315
Ala Glu Phe Thr Cys Arg Ala Gln Asn Pro Leu Gly Ser Gln Gln
            320                   325                   330
Val Tyr Leu Asn Val Ser Leu Gln Ser Lys Ala Thr Ser Gly Val
            335                   340                   345
Thr Gln Gly Val Val Gly Gly Ala Gly Ala Thr Ala Leu Val Phe
            350                   355                   360
Leu Ser Phe Cys Val Ile Phe Val Val Val Arg Ser Cys Arg Lys
            365                   370                   375
Lys Ser Ala Arg Pro Ala Ala Gly Val Gly Asp Thr Gly Ile Glu
            380                   385                   390
Asp Ala Asn Ala Val Arg Gly Ser Ala Ser Gln Gly Pro Leu Thr
            395                   400                   405
```

```
Glu Pro Trp Ala Glu Asp Ser Pro Pro Asp Gln Pro Pro Pro Ala
                410             415             420

Ser Ala Arg Ser Ser Val Gly Glu Gly Glu Leu Gln Tyr Ala Ser
                425             430             435

Leu Ser Phe Gln Met Val Lys Pro Trp Asp Ser Arg Gly Gln Glu
                440             445             450

Ala Thr Asp Thr Glu Tyr Ser Glu Ile Lys Ile His Arg
                455             460
```

<210> 161
<211> 739
<212> DNA
<213> Homo sapiens

<400> 161

```
gacgcccagt gacctgccga ggtcggcagc acagagctct ggagatgaag 50

accctgttcc tgggtgtcac gctcggcctg gccgctgccc tgtccttcac 100

cctggaggag gaggatatca cagggacctg gtacgtgaag gccatggtgg 150

tcgataagga ctttccggag gacaggaggc ccaggaaggt gtccccagtg 200

aaggtgacag ccctgggcgg tgggaagttg gaagccacgt tcaccttcat 250

gagggaggat cggtgcatcc agaagaaaat cctgatgcgg aagacggagg 300

agcctggcaa atacagcgcc tatgggggca ggaagctcat gtacctgcag 350

gagctgccca ggagggacca ctacatcttt tactgcaaag accagcacca 400

tgggggcctg ctccacatgg gaaagcttgt gggtaggaat tctgatacca 450

accgggaggc cctggaagaa tttaagaaat tggtgcagcg caagggactc 500

tcggaggagg acattttcac gcccctgcag acgggaagct gcgttcccga 550

acactaggca gcccccgggt ctgcacctcc agagcccacc ctaccaccag 600

acacagagcc cggaccacct ggacctaccc tccagccatg acccttccct 650

gctcccaccc acctgactcc aaataaagtc cttttccccc aaaaaaaaaa 700

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaa 739
```

<210> 162
<211> 170
<212> PRT
<213> Homo sapiens

<400> 162

```
Met Lys Thr Leu Phe Leu Gly Val Thr Leu Gly Leu Ala Ala Ala
  1               5              10               15

Leu Ser Phe Thr Leu Glu Glu Glu Asp Ile Thr Gly Thr Trp Tyr
```

```
                20                      25                      30
     Val Lys Ala Met Val Val Asp Lys Asp Phe Pro Glu Asp Arg Arg
                    35                      40                      45
     Pro Arg Lys Val Ser Pro Val Lys Val Thr Ala Leu Gly Gly Gly
                    50                      55                      60
     Lys Leu Glu Ala Thr Phe Thr Phe Met Arg Glu Asp Arg Cys Ile
                    65                      70                      75
     Gln Lys Lys Ile Leu Met Arg Lys Thr Glu Glu Pro Gly Lys Tyr
                    80                      85                      90
     Ser Ala Tyr Gly Gly Arg Lys Leu Met Tyr Leu Gln Glu Leu Pro
                    95                     100                     105
     Arg Arg Asp His Tyr Ile Phe Tyr Cys Lys Asp Gln His His Gly
                   110                     115                     120
     Gly Leu Leu His Met Gly Lys Leu Val Gly Arg Asn Ser Asp Thr
                   125                     130                     135
     Asn Arg Glu Ala Leu Glu Glu Phe Lys Lys Leu Val Gln Arg Lys
                   140                     145                     150
     Gly Leu Ser Glu Glu Asp Ile Phe Thr Pro Leu Gln Thr Gly Ser
                   155                     160                     165
     Cys Val Pro Glu His
                   170
```

<210> 163
<211> 22
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-22
<223> Synthetic construct.

<400> 163
 ggagatgaag accctgttcc tg 22

<210> 164
<211> 26
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-26
<223> Synthetic construct.

<400> 164
 ggagatgaag accctgttcc tgggtg 26

169

```
<210> 165
<211> 21
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-21
<223> Synthetic construct.

<400> 165
 gtcctccgga aagtccttat c 21

<210> 166
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-25
<223> Synthetic construct.

<400> 166
 gcctagtgtt cgggaacgca gcttc 25

<210> 167
<211> 50
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 167
 cagggacctg gtacgtgaag gccatggtgg tcgataagga ctttccggag 50

<210> 168
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45
<223> Synthetic construct.

<400> 168
 ctgtccttca ccctggagga ggaggatatc acagggacct ggtac 45

<210> 169
<211> 1204
<212> DNA
<213> Homo sapiens

<400> 169
```

gttccgcaga tgcagaggtt gaggtggctg cgggactgga agtcatcggg 50

cagaggtctc acagcagcca aggaacctgg ggcccgctcc tcccccctcc 100

aggccatgag gattctgcag ttaatcctgc ttgctctggc aacagggctt 150

gtaggggggag agaccaggat catcaagggg ttcgagtgca gcctcactc 200

ccagccctgg caggcagccc tgttcgagaa gacgcggcta ctctgtgggg 250

cgacgctcat cgcccccaga tggctcctga cagcagccca ctgcctcaag 300

ccccgctaca tagttcacct ggggcagcac aacctccaga aggaggaggg 350

ctgtgagcag acccggacag ccactgagtc cttcccccac cccggcttca 400

acaacagcct ccccaacaaa gaccaccgca atgacatcat gctggtgaag 450

atggcatcgc cagtctccat cacctgggct gtgcgacccc tcaccctctc 500

ctcacgctgt gtcactgctg caccagctg cctcatttcc ggctggggca 550

gcacgtccag cccccagtta cgcctgcctc acaccttgcg atgcgccaac 600

atcaccatca ttgagcacca gaagtgtgag aacgcctacc ccggcaacat 650

cacagacacc atggtgtgtg ccagcgtgca ggaaggggggc aaggactcct 700

gccagggtga ctccgggggc cctctggtct gtaaccagtc tcttcaaggc 750

attatctcct ggggccagga tccgtgtgcg atcacccgaa agcctggtgt 800

ctacacgaaa gtctgcaaat atgtggactg gatccaggag acgatgaaga 850

acaattagac tggacccacc caccacagcc catcaccctc catttccact 900

tggtgtttgg ttcctgttca ctctgttaat aagaaaccct aagccaagac 950

cctctacgaa cattctttgg gcctcctgga ctacaggaga tgctgtcact 1000

taataatcaa cctggggttc gaaatcagtg agacctggat tcaaattctg 1050

ccttgaaata ttgtgactct gggaatgaca acacctggtt tgttctctgt 1100

tgtatccccca gccccaaaga cagctcctgg ccatatatca aggtttcaat 1150

aaatatttgc taaatgaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1200

aaaa 1204

<210> 170
<211> 250
<212> PRT
<213> Homo sapiens

<400> 170
Met Arg Ile Leu Gln Leu Ile Leu Leu Ala Leu Ala Thr Gly Leu
1   5   10   15

171

```
Val Gly Gly Glu Thr Arg Ile Ile Lys Gly Phe Glu Cys Lys Pro
              20              25                  30

His Ser Gln Pro Trp Gln Ala Ala Leu Phe Glu Lys Thr Arg Leu
              35              40                  45

Leu Cys Gly Ala Thr Leu Ile Ala Pro Arg Trp Leu Leu Thr Ala
              50              55                  60

Ala His Cys Leu Lys Pro Arg Tyr Ile Val His Leu Gly Gln His
              65              70                  75

Asn Leu Gln Lys Glu Glu Gly Cys Glu Gln Thr Arg Thr Ala Thr
              80              85                  90

Glu Ser Phe Pro His Pro Gly Phe Asn Asn Ser Leu Pro Asn Lys
              95              100                 105

Asp His Arg Asn Asp Ile Met Leu Val Lys Met Ala Ser Pro Val
              110             115                 120

Ser Ile Thr Trp Ala Val Arg Pro Leu Thr Leu Ser Ser Arg Cys
              125             130                 135

Val Thr Ala Gly Thr Ser Cys Leu Ile Ser Gly Trp Gly Ser Thr
              140             145                 150

Ser Ser Pro Gln Leu Arg Leu Pro His Thr Leu Arg Cys Ala Asn
              155             160                 165

Ile Thr Ile Ile Glu His Gln Lys Cys Glu Asn Ala Tyr Pro Gly
              170             175                 180

Asn Ile Thr Asp Thr Met Val Cys Ala Ser Val Gln Glu Gly Gly
              185             190                 195

Lys Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Asn
              200             205                 210

Gln Ser Leu Gln Gly Ile Ile Ser Trp Gly Gln Asp Pro Cys Ala
              215             220                 225

Ile Thr Arg Lys Pro Gly Val Tyr Thr Lys Val Cys Lys Tyr Val
              230             235                 240

Asp Trp Ile Gln Glu Thr Met Lys Asn Asn
              245             250
```

<210> 171
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-25
<223> Synthetic construct.

<400> 171
ggctgcggga ctggaagtca tcggg 25

<210> 172
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 172
ctccaggcca tgaggattct gcag 24

<210> 173
<211> 18
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 173
cctctggtct gtaaccag 18

<210> 174
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 174
tctgtgatgt tgccggggta ggcg 24

<210> 175
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-25
<223> Synthetic construct.

<400> 175
cgtgtagaca ccaggctttc gggtg 25

<210> 176
<211> 18
<212> DNA

<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 176
 cccttgatga tcctggtc 18

<210> 177
<211> 50
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 177
 aggccatgag gattctgcag ttaatcctgc ttgctctggc aacagggctt 50

<210> 178
<211> 43
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-43
<223> Synthetic construct.

<400> 178
 gagagaccag gatcatcaag gggttcgagt gcaagcctca ctc 43

<210> 179
<211> 907
<212> DNA
<213> Homo sapiens

<400> 179
 gagcagtgtt ctgctggagc cgatgccaaa aaccatgcat ttcttattca 50

 gattcattgt tttctttttat ctgtggggcc tttttactgc tcagagacaa 100

 aagaaagagg agagcaccga agaagtgaaa atagaagttt tgcatcgtcc 150

 agaaaactgc tctaagacaa gcaagaaggg agacctacta aatgcccatt 200

 atgacggcta cctggctaaa gacggctcga aattctactg cagccggaca 250

 caaaatgaag gccaccccaa atggtttgtt cttggtgttg ggcaagtcat 300

 aaaaggccta gacattgcta tgacagatat gtgccctgga gaaaagcgaa 350

 aagtagttat acccccttca tttgcatacg gaaaggaagg ctatgcagaa 400

174

```
ggcaagattc caccggatgc tacattgatt tttgagattg aactttatgc 450

tgtgaccaaa ggaccacgga gcattgagac atttaaacaa atagacatgg 500

acaatgacag gcagctctct aaagccgaga taaacctcta cttgcaaagg 550

gaatttgaaa aagatgagaa gccacgtgac aagtcatatc aggatgcagt 600

tttagaagat atttttaaga agaatgacca tgatggtgat ggcttcattt 650

ctcccaagga atacaatgta taccaacacg atgaactata gcatatttgt 700

atttctactt ttttttttta gctatttact gtactttatg tataaaacaa 750

agtcactttt ctccaagttg tatttgctat ttttccccta tgagaagata 800

ttttgatctc cccaatacat tgattttggt ataataaatg tgaggctgtt 850

ttgcaaactt aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 900

aaaaaaa 907
```

<210> 180
<211> 222
<212> PRT
<213> Homo sapiens

<400> 180

```
Met Pro Lys Thr Met His Phe Leu Phe Arg Phe Ile Val Phe Phe
  1               5                  10                  15

Tyr Leu Trp Gly Leu Phe Thr Ala Gln Arg Gln Lys Lys Glu Glu
             20                  25                  30

Ser Thr Glu Glu Val Lys Ile Glu Val Leu His Arg Pro Glu Asn
             35                  40                  45

Cys Ser Lys Thr Ser Lys Lys Gly Asp Leu Leu Asn Ala His Tyr
             50                  55                  60

Asp Gly Tyr Leu Ala Lys Asp Gly Ser Lys Phe Tyr Cys Ser Arg
             65                  70                  75

Thr Gln Asn Glu Gly His Pro Lys Trp Phe Val Leu Gly Val Gly
             80                  85                  90

Gln Val Ile Lys Gly Leu Asp Ile Ala Met Thr Asp Met Cys Pro
             95                 100                 105

Gly Glu Lys Arg Lys Val Val Ile Pro Pro Ser Phe Ala Tyr Gly
            110                 115                 120

Lys Glu Gly Tyr Ala Glu Gly Lys Ile Pro Pro Asp Ala Thr Leu
            125                 130                 135

Ile Phe Glu Ile Glu Leu Tyr Ala Val Thr Lys Gly Pro Arg Ser
            140                 145                 150
```

175

```
Ile Glu Thr Phe Lys Gln Ile Asp Met Asp Asn Asp Arg Gln Leu
            155             160             165

Ser Lys Ala Glu Ile Asn Leu Tyr Leu Gln Arg Glu Phe Glu Lys
            170             175             180

Asp Glu Lys Pro Arg Asp Lys Ser Tyr Gln Asp Ala Val Leu Glu
            185             190             195

Asp Ile Phe Lys Lys Asn Asp His Asp Gly Asp Gly Phe Ile Ser
            200             205             210

Pro Lys Glu Tyr Asn Val Tyr Gln His Asp Glu Leu
            215             220
```

<210> 181
<211> 22
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-22
<223> Synthetic construct.

<400> 181
 gtgttctgct ggagccgatg cc 22

<210> 182
<211> 18
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 182
 gacatggaca atgacagg 18

<210> 183
<211> 18
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 183
 cctttcagga tgtaggag 18

<210> 184
<211> 18
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 184
 gatgtctgcc accccaag 18

<210> 185
<211> 27
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-27
<223> Synthetic construct.

<400> 185
 gcatcctgat atgacttgtc acgtggc 27

<210> 186
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 186
 tacaagaggg aagaggagtt gcac 24

<210> 187
<211> 52
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-52
<223> Synthetic construct.

<400> 187
 gcccattatg acggctacct ggctaaagac ggctcgaaat tctactgcag 50

 cc 52

<210> 188
<211> 573
<212> DNA
<213> Homo sapiens

<400> 188
 cagaaatgca gggaccattg cttcttccag gcctctgctt tctgctgagc 50

 ctctttggag ctgtgactca gaaaaccaaa acttcctgtg ctaagtgccc 100

177

```
cccaaatgct tcctgtgtca ataacactca ctgcacctgc aaccatggat 150

atacttctgg atctgggcag aaactattca cattcccctt ggagacatgt 200

aacgccaggc atggtggctc gcgcctgtaa tcccagttct ttgggaagcc 250

aaggcaggtg gatcacctga ggtcaggagt ttgagaccag cctggccaac 300

atagtgaaac cccgtgtcta ctaaaaatac aaaaatcagc cgggcgtggt 350

ggtgcatgcc tgcaatccca gttactcggg aggctgaggc aggagaatcg 400

cttgaactca ggaggcagaa gttgcagtga acccagatcc tgccattgca 450

ctccagcatg gatgacagag caagactccg tctcaaaaag aaaagatagt 500

ttcttgtttc atttcgcgac tgccctctca gtgtttcctg ggatcccctc 550

ccaaataaag tacttatatt ctc 573
```

<210> 189
<211> 74
<212> PRT
<213> Homo sapiens

<400> 189

```
Met Gln Gly Pro Leu Leu Leu Pro Gly Leu Cys Phe Leu Leu Ser
 1               5                  10                  15

Leu Phe Gly Ala Val Thr Gln Lys Thr Lys Thr Ser Cys Ala Lys
            20                  25                  30

Cys Pro Pro Asn Ala Ser Cys Val Asn Asn Thr His Cys Thr Cys
                35                  40                  45

Asn His Gly Tyr Thr Ser Gly Ser Gly Gln Lys Leu Phe Thr Phe
                50                  55                  60

Pro Leu Glu Thr Cys Asn Ala Arg His Gly Gly Ser Arg Leu
                65                  70
```

<210> 190
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 190
```
 agggaccatt gcttcttcca ggcc 24
```

<210> 191
<211> 24
<212> DNA
<213> Artificial

178

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 191
 cgttacatgt ctccaagggg aatg 24

<210> 192
<211> 50
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 192
 cctgtgctaa gtgcccccca aatgcttcct gtgtcaataa cactcactgc 50

<210> 193
<211> 1091
<212> DNA
<213> Homo sapiens

<400> 193
 caagcaggtc atccccttgg tgaccttcaa agagaagcag agagggcaga 50

 ggtgggggc acagggaaag ggtgacctct gagattcccc ttttcccca 100

 gactttggaa gtgacccacc atggggctca gcatcttttt gctcctgtgt 150

 gttcttgggc tcagccaggc agccacaccg aagattttca atggcactga 200

 gtgtgggcgt aactcacagc cgtggcaggt ggggctgttt gagggcacca 250

 gcctgcgctg cggggtgtc cttattgacc acaggtgggt cctcacagcg 300

 gctcactgca gcggcagcag gtactgggtg cgcctggggg aacacagcct 350

 cagccagctc gactggaccg agcagatccg gcacagcggc ttctctgtga 400

 cccatcccgg ctacctggga gcctcgacga gccacgagca cgacctccgg 450

 ctgctgcggc tgcgcctgcc cgtccgcgta accagcagcg ttcaacccct 500

 gcccctgccc aatgactgtg caaccgctgg caccgagtgc cacgtctcag 550

 gctggggcat caccaaccac ccacggaacc cattcccgga tctgctccag 600

 tgcctcaacc tctccatcgt ctcccatgcc acctgccatg gtgtgtatcc 650

 cgggagaatc acgagcaaca tggtgtgtgc aggcggcgtc ccggggcagg 700

 atgcctgcca gggtgattct gggggccccc tggtgtgtgg gggagtcctt 750

 caaggtctgg tgtcctgggg gtctgtgggg ccctgtggac aagatggcat 800

179

```
ccctggagtc tacacctata tttgcaagta tgtggactgg atccggatga 850

tcatgaggaa caactgacct gtttcctcca cctccacccc caccccttaa 900

cttgggtacc cctctggccc tcagagcacc aatatctcct ccatcacttc 950

ccctagctcc actcttgttg gcctgggaac ttcttggaac tttaactcct 1000

gccagccctt ctaagaccca cgagcggggt gagagaagtg tgcaatagtc 1050

tggaataaat ataaatgaag gaggggcaaa aaaaaaaaa a 1091
```

<210> 194
<211> 248
<212> PRT
<213> Homo sapiens

<400> 194

```
Met Gly Leu Ser Ile Phe Leu Leu Leu Cys Val Leu Gly Leu Ser
 1               5                  10                  15

Gln Ala Ala Thr Pro Lys Ile Phe Asn Gly Thr Glu Cys Gly Arg
                20                  25                  30

Asn Ser Gln Pro Trp Gln Val Gly Leu Phe Glu Gly Thr Ser Leu
                35                  40                  45

Arg Cys Gly Gly Val Leu Ile Asp His Arg Trp Val Leu Thr Ala
                50                  55                  60

Ala His Cys Ser Gly Ser Arg Tyr Trp Val Arg Leu Gly Glu His
                65                  70                  75

Ser Leu Ser Gln Leu Asp Trp Thr Glu Gln Ile Arg His Ser Gly
                80                  85                  90

Phe Ser Val Thr His Pro Gly Tyr Leu Gly Ala Ser Thr Ser His
                95                  100                 105

Glu His Asp Leu Arg Leu Leu Arg Leu Arg Leu Pro Val Arg Val
                110                 115                 120

Thr Ser Ser Val Gln Pro Leu Pro Leu Pro Asn Asp Cys Ala Thr
                125                 130                 135

Ala Gly Thr Glu Cys His Val Ser Gly Trp Gly Ile Thr Asn His
                140                 145                 150

Pro Arg Asn Pro Phe Pro Asp Leu Leu Gln Cys Leu Asn Leu Ser
                155                 160                 165

Ile Val Ser His Ala Thr Cys His Gly Val Tyr Pro Gly Arg Ile
                170                 175                 180

Thr Ser Asn Met Val Cys Ala Gly Gly Val Pro Gly Gln Asp Ala
                185                 190                 195

Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Gly Gly Val Leu
```

180

```
                 200                      205                      210
     Gln Gly Leu Val Ser Trp Gly Ser Val Gly Pro Cys Gly Gln Asp
                     215                      220                      225

     Gly Ile Pro Gly Val Tyr Thr Tyr Ile Cys Lys Tyr Val Asp Trp
                     230                      235  ·                   240

     Ile Arg Met Ile Met Arg Asn Asn
                     245
```

<210> 195
<211> 1485
<212> DNA
<213> Homo sapiens

<400> 195

```
gcggccacac gcagctagcc ggagcccgga ccaggcgcct gtgcctcctc 50

ctcgtccctc gccgcgtccg cgaagcctgg agccggcggg agccccgcgc 100

tcgccatgtc gggcgagctc agcaacaggt tccaaggagg gaaggcgttc 150

ggcttgctca aagcccggca ggagaggagg ctggccgaga tcaaccggga 200

gtttctgtgt gaccagaagt acagtgatga agagaacctt ccagaaaagc 250

tcacagcctt caaagagaag tacatggagt ttgacctgaa caatgaaggc 300

gagattgacc tgatgtcttt aaagaggatg atggagaagc ttggtgtccc 350

caagacccac ctggagatga agaagatgat ctcagaggtg acaggagggg 400

tcagtgacac tatatcctac cgagactttg tgaacatgat gctggggaaa 450

cggtcggctg tcctcaagtt agtcatgatg tttgaaggaa aagccaacga 500

gagcagcccc aagccagttg gcccccctcc agagagagac attgctagcc 550

tgccctgagg accccgcctg gactccccag ccttcccacc ccatacctcc 600

ctcccgatct tgctgccctt cttgacacac tgtgatctct ctctctctca 650

tttgtttggt cattgagggt ttgtttgtgt tttcatcaat gtctttgtaa 700

agcacaaatt atctgcctta aaggggctct gggtcgggga atcctgagcc 750

ttgggtcccc tccctctctt cttccctcct tccccgctcc ctgtgcagaa 800

gggctgatat caaaccaaaa actagagggg gcagggccag ggcagggagg 850

cttccagcct gtgttcccct cacttggagg aaccagcact ctccatcctt 900

tcagaaagtc tccaagccaa gttcaggctc actgacctgg ctctgacgag 950

gaccccaggc cactctgaga agaccttgga gtagggacaa ggctgcaggg 1000

cctctttcgg gtttccttgg acagtgccat ggttccagtg ctctggtgtc 1050
```

```
acccaggaca cagccactcg gggccccgct gccccagctg atccccactc 1100

attccacacc tcttctcatc ctcagtgatg tgaaggtggg aaggaaagga 1150

gcttggcatt gggagccctt caagaaggta ccagaaggaa ccctccagtc 1200

ctgctctctg gccacacctg tgcaggcagc tgagaggcag cgtgcagccc 1250

tactgtccct tactggggca gcagagggct tcggaggcag aagtgaggcc 1300

tggggtttgg ggggaaaggt cagctcagtg ctgttccacc ttttagggag 1350

gatactgagg ggaccaggat gggagaatga ggagtaaaat gctcacggca 1400

aagtcagcag cactggtaag ccaagactga gaaatacaag gttgcttgtc 1450

tgaccccaat ctgcttgaaa aaaaaaaaa aaaaa 1485
```

<210> 196
<211> 150
<212> PRT
<213> Homo sapiens

<400> 196

```
Met Ser Gly Glu Leu Ser Asn Arg Phe Gln Gly Gly Lys Ala Phe
1               5                   10                  15

Gly Leu Leu Lys Ala Arg Gln Glu Arg Arg Leu Ala Glu Ile Asn
            20              25                  30

Arg Glu Phe Leu Cys Asp Gln Lys Tyr Ser Asp Glu Glu Asn Leu
            35              40                  45

Pro Glu Lys Leu Thr Ala Phe Lys Glu Lys Tyr Met Glu Phe Asp
            50              55                  60

Leu Asn Asn Glu Gly Glu Ile Asp Leu Met Ser Leu Lys Arg Met
            65              70                  75

Met Glu Lys Leu Gly Val Pro Lys Thr His Leu Glu Met Lys Lys
            80              85                  90

Met Ile Ser Glu Val Thr Gly Gly Val Ser Asp Thr Ile Ser Tyr
            95              100                 105

Arg Asp Phe Val Asn Met Met Leu Gly Lys Arg Ser Ala Val Leu
            110             115                 120

Lys Leu Val Met Met Phe Glu Gly Lys Ala Asn Glu Ser Ser Pro
            125             130                 135

Lys Pro Val Gly Pro Pro Pro Glu Arg Asp Ile Ala Ser Leu Pro
            140             145                 150
```

<210> 197
<211> 4842
<212> DNA
<213> Homo sapiens

182

<400> 197

```
cgcgctcccc gcgcgcctcc tcgggctcca cgcgtcttgc cccgcagagg 50

cagcctcctc caggagcggg gccctgcaca ccatggcccc cgggtgggca 100

ggggtcggcg ccgccgtgcg cgcccgcctg gcgctggcct tggcgctggc 150

gagcgtcctg agtgggcctc cagccgtcgc ctgccccacc aagtgtacct 200

gctccgctgc cagcgtggac tgccacgggc tgggcctccg cgcggttcct 250

cggggcatcc cccgcaacgc tgagcgcctt gacctggaca gaaataatat 300

caccaggatc accaagatgg acttcgctgg gctcaagaac ctccgagtct 350

tgcatctgga agacaaccag gtcagcgtca tcgagagagg cgccttccag 400

gacctgaagc agctagagcg actgcgcctg aacaagaata agctgcaagt 450

ccttccagaa ttgcttttcc agagcacgcc gaagctcacc agactagatt 500

tgagtgaaaa ccagatccag gggatcccga ggaaggcgtt ccgcggcatc 550

accgatgtga agaacctgca actggacaac aaccacatca gctgcattga 600

agatggagcc ttccgagcgc tgcgcgattt ggagatcctt accctcaaca 650

acaacaacat cagtcgcatc ctggtcacca gcttcaacca catgccgaag 700

atccgaactc tgcgcctcca ctccaaccac ctctactgcg actgccacct 750

ggcctggctc tcggattggc tgcgacagcg acggacagtt ggccagttca 800

cactctgcat ggctcctgtg catttgaggg gcttcaacgt ggcggatgtg 850

cagaagaagg agtacgtgtg cccagccccc cactcggagc ccccatcctg 900

caatgccaac tccatctcct gcccttcgcc ctgcacgtgc agcaataaca 950

tcgtggactg tcgaggaaag ggcttgatgg agattcctgc caacttgccg 1000

gagggcatcg tcgaaatacg cctagaacag aactccatca agccatcccc 1050

tgcaggagcc ttcacccagt acaagaaact gaagcgaata gacatcagca 1100

agaatcagat atcggatatt gctccagatg ccttccaggg cctgaaatca 1150

ctcacatcgc tggtcctgta tgggaacaag atcaccgaga ttgccaaggg 1200

actgtttgat gggctggtgt ccctacagct gctcctcctc aatgccaaca 1250

agatcaactg cctgcgggtg aacacgtttc aggacctgca gaacctcaac 1300

ttgctctccc tgtatgacaa caagctgcag accatcagca aggggctctt 1350

cgcccctctg cagtccatcc agacactcca cttagcccaa aacccatttg 1400

tgtgcgactg ccacttgaag tggctggccg actacctcca ggacaacccc 1450
```

183

```
atcgagacaa gcggggcccg ctgcagcagc ccgcgccgac tcgccaacaa 1500

gcgcatcagc cagatcaaga gcaagaagtt ccgctgctca ggctccgagg 1550

attaccgcag caggttcagc agcgagtgct tcatggacct cgtgtgcccc 1600

gagaagtgtc gctgtgaggg cacgattgtg gactgctcca accagaagct 1650

ggtccgcatc ccaagccacc tccctgaata tgtcaccgac ctgcgactga 1700

atgacaatga ggtatctgtt ctggaggcca ctggcatctt caagaagttg 1750

cccaacctgc ggaaaataaa tctgagtaac aataagatca aggaggtgcg 1800

agagggagct ttcgatggag cagccagcgt gcaggagctg atgctgacag 1850

ggaaccagct ggagaccgtg cacgggcgcg tgttccgtgg cctcagtggc 1900

ctcaaaacct tgatgctgag gagtaacttg atcagctgtg tgagtaatga 1950

cacctttgcc ggcctgagtt cggtgagact gctgtccctc tatgacaatc 2000

ggatcaccac catcacccct ggggccttca ccacgcttgt ctccctgtcc 2050

accataaacc tcctgtccaa ccccttcaac tgcaactgcc acctggcctg 2100

gctcggcaag tggttgagga agaggcggat cgtcagtggg aaccctaggt 2150

gccagaagcc atttttcctc aaggagattc ccatccagga tgtggccatc 2200

caggacttca cctgtgatgg caacgaggag agtagctgcc agctgagccc 2250

gcgctgcccg gagcagtgca cctgtatgga gacagtggtg cgatgcagca 2300

acaaggggct ccgcgccctc cccagaggca tgcccaagga tgtgaccgag 2350

ctgtacctgg aaggaaacca cctaacagcc gtgcccagag agctgtccgc 2400

cctccgacac ctgacgctta ttgacctgag caacaacagc atcagcatgc 2450

tgaccaatta caccttcagt aacatgtctc acctctccac tctgatcctg 2500

agctacaacc ggctgaggtg catccccgtc cacgccttca cgggctgcg 2550

gtccctgcga gtgctaaccc tccatggcaa tgacatttcc agcgttcctg 2600

aaggctcctt caacgacctc acatctcttt cccatctggc gctgggaacc 2650

aacccactcc actgtgactg cagtcttcgg tggctgtcgg agtgggtgaa 2700

ggcgggtac aaggagcctg gcatcgcccg ctgcagtagc cctgagccca 2750

tggctgacag gctcctgctc accaccccaa cccaccgctt ccagtgcaaa 2800

gggccagtgg acatcaacat tgtggccaaa tgcaatgcct gcctctccag 2850

cccgtgcaag aataacggga catgcacca ggaccctgtg gagctgtacc 2900
```

184

```
gctgtgcctg cccctacagc tacaagggca aggactgcac tgtgcccatc 2950

aacacctgca tccagaaccc ctgtcagcat ggaggcacct gccacctgag 3000

tgacagccac aaggatgggt tcagctgctc ctgccctctg ggctttgagg 3050

ggcagcggtg tgagatcaac ccagatgact gtgaggacaa cgactgcgaa 3100

aacaatgcca cctgcgtgga cgggatcaac aactacgtgt gtatctgtcc 3150

gcctaactac acaggtgagc tatgcgacga ggtgattgac cactgtgtgc 3200

ctgagctgaa cctctgtcag catgaggcca agtgcatccc cctggacaaa 3250

ggattcagct gcgagtgtgt ccctggctac agcgggaagc tctgtgagac 3300

agacaatgat gactgtgtgg cccacaagtg ccgccacggg gcccagtgcg 3350

tggacacaat caatggctac acatgcacct gcccccaggg cttcagtgga 3400

cccttctgtg aacacccccc acccatggtc ctactgcaga ccagcccatg 3450

cgaccagtac gagtgccaga acggggccca gtgcatcgtg gtgcagcagg 3500

agcccacctg ccgctgccca ccaggcttcg ccggccccag atgcgagaag 3550

ctcatcactg tcaacttcgt gggcaaagac tcctacgtgg aactggcctc 3600

cgccaaggtc cgaccccagg ccaacatctc cctgcaggtg gccactgaca 3650

aggacaacgg catccttctc tacaaaggag acaatgaccc cctggcactg 3700

gagctgtacc agggccacgt gcggctggtc tatgacagcc tgagttcccc 3750

tccaaccaca gtgtacagtg tggagacagt gaatgatggg cagtttcaca 3800

gtgtggagct ggtgacgcta aaccagaccc tgaacctagt agtggacaaa 3850

ggaactccaa agagcctggg gaagctccag aagcagccag cagtgggcat 3900

caacagcccc ctctaccttg gaggcatccc cacctccacc ggcctctccg 3950

ccttgcgcca gggcacggac cggcctctag gcggcttcca cggatgcatc 4000

catgaggtgc gcatcaacaa cgagctgcag gacttcaagg ccctcccacc 4050

acagtccctg ggggtgtcac caggctgcaa gtcctgcacc gtgtgcaagc 4100

acggcctgtg ccgctccgtg gagaaggaca gcgtggtgtg cgagtgccgc 4150

ccaggctgga ccggcccact ctgcgaccag gaggcccggg acccctgcct 4200

cggccacaga tgccaccatg gaaaatgtgt ggcaactggg acctcataca 4250

tgtgcaagtg tgccgagggc tatggagggg acttgtgtga caacaagaat 4300

gactctgcca atgcctgctc agccttcaag tgtcaccatg ggcagtgcca 4350
```

185

```
catctcagac caaggggagc cctactgcct gtgccagccc ggctttagcg 4400

gcgagcactg ccaacaagag aatccgtgcc tgggacaagt agtccgagag 4450

gtgatccgcc gccagaaagg ttatgcatca tgtgccacag cctccaaggt 4500

gcccatcatg gaatgtcgtg ggggctgtgg gccccagtgc tgccagccca 4550

cccgcagcaa gcggcggaaa tacgtcttcc agtgcacgga cggctcctcg 4600

tttgtagaag aggtggagag acacttagag tgcggctgcc tcgcgtgttc 4650

ctaagcccct gcccgcctgc ctgccacctc tcggactcca gcttgatgga 4700

gttgggacag ccatgtggga cccccctggtg attcagcatg aaggaaatga 4750

agctggagag gaaggtaaag aagaagagaa tattaagtat attgtaaaat 4800

aaacaaaaaa tagaacttaa aaaaaaaaaa aaaaaaaaaa aa 4842
```

<210> 198
<211> 1523
<212> PRT
<213> Homo sapiens

<400> 198

```
Met Ala Pro Gly Trp Ala Gly Val Gly Ala Ala Val Arg Ala Arg
 1               5                  10                  15

Leu Ala Leu Ala Leu Ala Leu Ala Ser Val Leu Ser Gly Pro Pro
                20                  25                  30

Ala Val Ala Cys Pro Thr Lys Cys Thr Cys Ser Ala Ala Ser Val
                35                  40                  45

Asp Cys His Gly Leu Gly Leu Arg Ala Val Pro Arg Gly Ile Pro
                50                  55                  60

Arg Asn Ala Glu Arg Leu Asp Leu Asp Arg Asn Asn Ile Thr Arg
                65                  70                  75

Ile Thr Lys Met Asp Phe Ala Gly Leu Lys Asn Leu Arg Val Leu
                80                  85                  90

His Leu Glu Asp Asn Gln Val Ser Val Ile Glu Arg Gly Ala Phe
                95                  100                 105

Gln Asp Leu Lys Gln Leu Glu Arg Leu Arg Leu Asn Lys Asn Lys
                110                 115                 120

Leu Gln Val Leu Pro Glu Leu Leu Phe Gln Ser Thr Pro Lys Leu
                125                 130                 135

Thr Arg Leu Asp Leu Ser Glu Asn Gln Ile Gln Gly Ile Pro Arg
                140                 145                 150

Lys Ala Phe Arg Gly Ile Thr Asp Val Lys Asn Leu Gln Leu Asp
                155                 160                 165
```

186

```
Asn Asn His Ile Ser Cys Ile Glu Asp Gly Ala Phe Arg Ala Leu
            170             175             180

Arg Asp Leu Glu Ile Leu Thr Leu Asn Asn Asn Asn Ile Ser Arg
            185             190             195

Ile Leu Val Thr Ser Phe Asn His Met Pro Lys Ile Arg Thr Leu
            200             205             210

Arg Leu His Ser Asn His Leu Tyr Cys Asp Cys His Leu Ala Trp
            215             220             225

Leu Ser Asp Trp Leu Arg Gln Arg Arg Thr Val Gly Gln Phe Thr
            230             235             240

Leu Cys Met Ala Pro Val His Leu Arg Gly Phe Asn Val Ala Asp
            245                 250             255

Val Gln Lys Lys Glu Tyr Val Cys Pro Ala Pro His Ser Glu Pro
            260             265             270

Pro Ser Cys Asn Ala Asn Ser Ile Ser Cys Pro Ser Pro Cys Thr
            275             280             285

Cys Ser Asn Asn Ile Val Asp Cys Arg Gly Lys Gly Leu Met Glu
            290             295             300

Ile Pro Ala Asn Leu Pro Glu Gly Ile Val Glu Ile Arg Leu Glu
            305             310             315

Gln Asn Ser Ile Lys Ala Ile Pro Ala Gly Ala Phe Thr Gln Tyr
            320             325             330

Lys Lys Leu Lys Arg Ile Asp Ile Ser Lys Asn Gln Ile Ser Asp
            335             340             345

Ile Ala Pro Asp Ala Phe Gln Gly Leu Lys Ser Leu Thr Ser Leu
            350             355             360

Val Leu Tyr Gly Asn Lys Ile Thr Glu Ile Ala Lys Gly Leu Phe
            365             370             375

Asp Gly Leu Val Ser Leu Gln Leu Leu Leu Leu Asn Ala Asn Lys
            380             385             390

Ile Asn Cys Leu Arg Val Asn Thr Phe Gln Asp Leu Gln Asn Leu
            395             400             405

Asn Leu Leu Ser Leu Tyr Asp Asn Lys Leu Gln Thr Ile Ser Lys
            410             415             420

Gly Leu Phe Ala Pro Leu Gln Ser Ile Gln Thr Leu His Leu Ala
            425             430             435

Gln Asn Pro Phe Val Cys Asp Cys His Leu Lys Trp Leu Ala Asp
            440             445             450

Tyr Leu Gln Asp Asn Pro Ile Glu Thr Ser Gly Ala Arg Cys Ser
```

187

```
                    455                      460                      465
Ser Pro Arg Arg Leu Ala Asn Lys Arg Ile Ser Gln Ile Lys Ser
                    470                      475                      480
Lys Lys Phe Arg Cys Ser Gly Ser Glu Asp Tyr Arg Ser Arg Phe
                    485                      490                      495
Ser Ser Glu Cys Phe Met Asp Leu Val Cys Pro Glu Lys Cys Arg
                    500                      505                      510
Cys Glu Gly Thr Ile Val Asp Cys Ser Asn Gln Lys Leu Val Arg
                    515                      520                      525
Ile Pro Ser His Leu Pro Glu Tyr Val Thr Asp Leu Arg Leu Asn
                    530                      535                      540
Asp Asn Glu Val Ser Val Leu Glu Ala Thr Gly Ile Phe Lys Lys
                    545                      550                      555
Leu Pro Asn Leu Arg Lys Ile Asn Leu Ser Asn Asn Lys Ile Lys
                    560                      565                      570
Glu Val Arg Glu Gly Ala Phe Asp Gly Ala Ala Ser Val Gln Glu
                    575                      580                      585
Leu Met Leu Thr Gly Asn Gln Leu Glu Thr Val His Gly Arg Val
                    590                      595                      600
Phe Arg Gly Leu Ser Gly Leu Lys Thr Leu Met Leu Arg Ser Asn
                    605                      610                      615
Leu Ile Ser Cys Val Ser Asn Asp Thr Phe Ala Gly Leu Ser Ser
                    620                      625                      630
Val Arg Leu Leu Ser Leu Tyr Asp Asn Arg Ile Thr Thr Ile Thr
                    635                      640                      645
Pro Gly Ala Phe Thr Thr Leu Val Ser Leu Ser Thr Ile Asn Leu
                    650                      655                      660
Leu Ser Asn Pro Phe Asn Cys Asn Cys His Leu Ala Trp Leu Gly
                    665                      670                      675
Lys Trp Leu Arg Lys Arg Arg Ile Val Ser Gly Asn Pro Arg Cys
                    680                      685                      690
Gln Lys Pro Phe Phe Leu Lys Glu Ile Pro Ile Gln Asp Val Ala
                    695                      700                      705
Ile Gln Asp Phe Thr Cys Asp Gly Asn Glu Glu Ser Ser Cys Gln
                    710                      715                      720
Leu Ser Pro Arg Cys Pro Glu Gln Cys Thr Cys Met Glu Thr Val
                    725                      730                      735
Val Arg Cys Ser Asn Lys Gly Leu Arg Ala Leu Pro Arg Gly Met
                    740                      745                      750
```

188

```
Pro Lys Asp Val Thr Glu Leu Tyr Leu Glu Gly Asn His Leu Thr
            755                 760             765

Ala Val Pro Arg Glu Leu Ser Ala Leu Arg His Leu Thr Leu Ile
            770                 775             780

Asp Leu Ser Asn Asn Ser Ile Ser Met Leu Thr Asn Tyr Thr Phe
            785                 790             795

Ser Asn Met Ser His Leu Ser Thr Leu Ile Leu Ser Tyr Asn Arg
            800       .         805             810

Leu Arg Cys Ile Pro Val His Ala Phe Asn Gly Leu Arg Ser Leu
            815                 820             825

Arg Val Leu Thr Leu His Gly Asn Asp Ile Ser Ser Val Pro Glu
            830                 835             840

Gly Ser Phe Asn Asp Leu Thr Ser Leu Ser His Leu Ala Leu Gly
            845                 850             855

Thr Asn Pro Leu His Cys Asp Cys Ser Leu Arg Trp Leu Ser Glu
            860                 865             870

Trp Val Lys Ala Gly Tyr Lys Glu Pro Gly Ile Ala Arg Cys Ser
            875                 880             885

Ser Pro Glu Pro Met Ala Asp Arg Leu Leu Leu Thr Thr Pro Thr
            890                 895             900

His Arg Phe Gln Cys Lys Gly Pro Val Asp Ile Asn Ile Val Ala
            905                 910             915

Lys Cys Asn Ala Cys Leu Ser Ser Pro Cys Lys Asn Asn Gly Thr
            920                 925             930

Cys Thr Gln Asp Pro Val Glu Leu Tyr Arg Cys Ala Cys Pro Tyr
            935                 940             945

Ser Tyr Lys Gly Lys Asp Cys Thr Val Pro Ile Asn Thr Cys Ile
            950                 955             960

Gln Asn Pro Cys Gln His Gly Gly Thr Cys His Leu Ser Asp Ser
            965                 970             975

His Lys Asp Gly Phe Ser Cys Ser Cys Pro Leu Gly Phe Glu Gly
            980                 985             990

Gln Arg Cys Glu Ile Asn Pro Asp Asp Cys Glu Asp Asn Asp Cys
            995                 1000            1005

Glu Asn Asn Ala Thr Cys Val Asp Gly Ile Asn Asn Tyr Val Cys
            1010                1015            1020

Ile Cys Pro Pro Asn Tyr Thr Gly Glu Leu Cys Asp Glu Val Ile
            1025                1030            1035

Asp His Cys Val Pro Glu Leu Asn Leu Cys Gln His Glu Ala Lys
```

189

```
             1040                    1045                    1050
Cys Ile Pro Leu Asp Lys Gly Phe Ser Cys Glu Cys Val Pro Gly
             1055                    1060                    1065
Tyr Ser Gly Lys Leu Cys Glu Thr Asp Asn Asp Asp Cys Val Ala
             1070                    1075                    1080
His Lys Cys Arg His Gly Ala Gln Cys Val Asp Thr Ile Asn Gly
             1085                    1090                    1095
Tyr Thr Cys Thr Cys Pro Gln Gly Phe Ser Gly Pro Phe Cys Glu
             1100                    1105                    1110
His Pro Pro Pro Met Val Leu Leu Gln Thr Ser Pro Cys Asp Gln
             1115                    1120                    1125
Tyr Glu Cys Gln Asn Gly Ala Gln Cys Ile Val Val Gln Gln Glu
             1130                    1135                    1140
Pro Thr Cys Arg Cys Pro Pro Gly Phe Ala Gly Pro Arg Cys Glu
             1145                    1150                    1155
Lys Leu Ile Thr Val Asn Phe Val Gly Lys Asp Ser Tyr Val Glu
             1160                    1165                    1170
Leu Ala Ser Ala Lys Val Arg Pro Gln Ala Asn Ile Ser Leu Gln
             1175                    1180                    1185
Val Ala Thr Asp Lys Asp Asn Gly Ile Leu Leu Tyr Lys Gly Asp
             1190                    1195                    1200
Asn Asp Pro Leu Ala Leu Glu Leu Tyr Gln Gly His Val Arg Leu
             1205                    1210                    1215
Val Tyr Asp Ser Leu Ser Ser Pro Pro Thr Thr Val Tyr Ser Val
             1220                    1225                    1230
Glu Thr Val Asn Asp Gly Gln Phe His Ser Val Glu Leu Val Thr
             1235                    1240                    1245
Leu Asn Gln Thr Leu Asn Leu Val Val Asp Lys Gly Thr Pro Lys
             1250                    1255                    1260
Ser Leu Gly Lys Leu Gln Lys Gln Pro Ala Val Gly Ile Asn Ser
             1265                    1270                    1275
Pro Leu Tyr Leu Gly Gly Ile Pro Thr Ser Thr Gly Leu Ser Ala
             1280                    1285                    1290
Leu Arg Gln Gly Thr Asp Arg Pro Leu Gly Gly Phe His Gly Cys
             1295                    1300                    1305
Ile His Glu Val Arg Ile Asn Asn Glu Leu Gln Asp Phe Lys Ala
             1310                    1315                    1320
Leu Pro Pro Gln Ser Leu Gly Val Ser Pro Gly Cys Lys Ser Cys
             1325                    1330                    1335
```

```
Thr Val Cys Lys His Gly Leu Cys Arg Ser Val Glu Lys Asp Ser
            1340            1345            1350

Val Val Cys Glu Cys Arg Pro Gly Trp Thr Gly Pro Leu Cys Asp
            1355            1360            1365

Gln Glu Ala Arg Asp Pro Cys Leu Gly His Arg Cys His His Gly
            1370            1375            1380

Lys Cys Val Ala Thr Gly Thr Ser Tyr Met Cys Lys Cys Ala Glu
            1385            1390            1395

Gly Tyr Gly Gly Asp Leu Cys Asp Asn Lys Asn Asp Ser Ala Asn
            1400            1405            1410

Ala Cys Ser Ala Phe Lys Cys His His Gly Gln Cys His Ile Ser
            1415            1420            1425

Asp Gln Gly Glu Pro Tyr Cys Leu Cys Gln Pro Gly Phe Ser Gly
            1430            1435            1440

Glu His Cys Gln Gln Glu Asn Pro Cys Leu Gly Gln Val Val Arg
            1445            1450            1455

Glu Val Ile Arg Arg Gln Lys Gly Tyr Ala Ser Cys Ala Thr Ala
            1460            1465            1470

Ser Lys Val Pro Ile Met Glu Cys Arg Gly Gly Cys Gly Pro Gln
            1475            1480            1485

Cys Cys Gln Pro Thr Arg Ser Lys Arg Arg Lys Tyr Val Phe Gln
            1490            1495            1500

Cys Thr Asp Gly Ser Ser Phe Val Glu Glu Val Glu Arg His Leu
            1505            1510            1515

Glu Cys Gly Cys Leu Ala Cys Ser
            1520
```

<210> 199
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 199
 atggagattc ctgccaactt gccg 24

<210> 200
<211> 24
<212> DNA
<213> Artificial

<220>

<400> 200
 ttgttggcat tgaggaggag cagc 24

<210> 201
<211> 50
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 201
 gagggcatcg tcgaaatacg cctagaacag aactccatca aagccatccc 50

<210> 202
<211> 753
<212> DNA
<213> Homo sapiens

<400> 202
 ggatgcagga cgctcccctg agctgcctgt caccgactag gtggagcagt 50

 gtttcttccg cagactcaac tgagaagtca gcctctgggg caggcaccag 100

 gaatctgcct tttcagttct gtctccggca ggctttgagg atgaaggctg 150

 cgggcattct gaccctcatt ggctgcctgg tcacaggcgc cgagtccaaa 200

 atctacactc gttgcaaact ggcaaaaata ttctcgaggg ctggcctgga 250

 caattactgg ggcttcagcc ttggaaactg gatctgcatg gcatattatg 300

 agagcggcta caacaccaca gccccgacgg tcctggatga cggcagcatc 350

 gactatggca tcttccagat caacagcttc gcgtggtgca gacgcggaaa 400

 gctgaaggag aacaaccact gccatgtcgc ctgctcagcc ttgatcactg 450

 atgacctcac agatgcaatt atctgtgcca ggaaaattgt taaagagaca 500

 caaggaatga actattggca aggctggaag aaacattgtg agggcagaga 550

 cctgtccgag tggaaaaaag gctgtgaggt ttcctaaact ggaactggac 600

 ccaggatgct ttgcagcaac gccctaggat ttgcagtgaa tgtccaaatg 650

 cctgtgtcat cttgtcccgt ttcctcccaa tattccttct caaacttgga 700

 gagggaaaat taagctatac ttttaagaaa ataaatattt ccatttaaat 750

 gtc 753

```
<210> 203
<211> 148
<212> PRT
<213> Homo sapiens

<400> 203
 Met Lys Ala Ala Gly Ile Leu Thr Leu Ile Gly Cys Leu Val Thr
 1               5                  10                  15

 Gly Ala Glu Ser Lys Ile Tyr Thr Arg Cys Lys Leu Ala Lys Ile
                 20                  25                  30

 Phe Ser Arg Ala Gly Leu Asp Asn Tyr Trp Gly Phe Ser Leu Gly
                 35                  40                  45

 Asn Trp Ile Cys Met Ala Tyr Tyr Glu Ser Gly Tyr Asn Thr Thr
                 50                  55                  60

 Ala Pro Thr Val Leu Asp Asp Gly Ser Ile Asp Tyr Gly Ile Phe
                 65                  70                  75

 Gln Ile Asn Ser Phe Ala Trp Cys Arg Arg Gly Lys Leu Lys Glu
                 80                  85                  90

 Asn Asn His Cys His Val Ala Cys Ser Ala Leu Ile Thr Asp Asp
                 95                  100                 105

 Leu Thr Asp Ala Ile Ile Cys Ala Arg Lys Ile Val Lys Glu Thr
                 110                 115                 120

 Gln Gly Met Asn Tyr Trp Gln Gly Trp Lys Lys His Cys Glu Gly
                 125                 130                 135

 Arg Asp Leu Ser Glu Trp Lys Lys Gly Cys Glu Val Ser
                 140                 145

<210> 204
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 204
 gcaggctttg aggatgaagg ctgc     24

<210> 205
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.
```

<400> 205
 ctcattggct gcctggtcac aggc 24

<210> 206
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 206
 ccagtcggac aggtctctcc cctc 24

<210> 207
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 207
 tcagtgacca aggctgagca ggcg 24

<210> 208
<211> 47
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-47
<223> Synthetic construct.

<400> 208
 ctacactcgt tgcaaactgg caaaaatatt ctcgagggct ggcctgg 47

<210> 209
<211> 1648
<212> DNA
<213> Homo sapiens

<400> 209
 caggccattt gcatcccact gtccttgtgt tcggagccag gccacaccgt 50

 cctcagcagt gtcatgtgtt aaaaacgcca agctgaatat atcatgcccc 100

 tattaaaact tgtacatggc tccccattgg ttttttggaga aaagttcaag 150

 ctttttacct tggtgtctgc ctgtatccca gtgttcaggc tggctagacg 200

 gcggaagaag atcctatttt actgtcactt cccagatctg cttctcacca 250

194

```
agagagattc ttttcttaaa cgactataca gggcccccaat tgactggata 300

gaggaataca ccacaggcat ggcagactgc atcttagtca acagccagtt 350

cacagctgct gtttttaagg aaacattcaa gtccctgtct cacatagacc 400

ctgatgtcct ctatccatct ctaaatgtca ccagctttga ctcagttgtt 450

cctgaaaagc tggatgacct agtccccaag gggaaaaaat tcctgctgct 500

ctccatcaac agatacgaaa ggaagaaaaa tctgactttg gcactggaag 550

ccctagtaca gctgcgtgga agattgacat cccaagattg ggagagggtt 600

catctgatcg tggcaggtgg ttatgacgag agagtcctgg agaatgtgga 650

acattatcag gaattgaaga aaatggtcca acagtccgac cttggccagt 700

atgtgacctt cttgaggtct ttctcagaca aacagaaaat ctccctcctc 750

cacagctgca cgtgtgtgct ttacacacca agcaatgagc actttggcat 800

tgtccctctg gaagccatgt acatgcagtg cccagtcatt gctgttaatt 850

cgggtggacc cttggagtcc attgaccaca gtgtcacagg gtttctgtgt 900

gagcctgacc cggtgcactt ctcagaagca atagaaaagt tcatccgtga 950

accttcctta aaagccacca tgggcctggc tggaagagcc agagtgaagg 1000

aaaaattttc ccctgaagca tttacagaac agctctaccg atatgttacc 1050

aaactgctgg tataatcaga ttgtttttaa gatctccatt aatgtcattt 1100

ttatggattg tagacccagt tttgaaacca aaaaagaaac ctagaatcta 1150

atgcagaaga gatcttttaa aaaataaact tgagtcttga atgtgagcca 1200

ctttcctata taccacacct ccctgtccac ttttcagaaa aaccatgtct 1250

tttatgctat aatcattcca aattttgcca gtgttaagtt acaaatgtgg 1300

tgtcattcca tgttcagcag agtattttaa ttatatttttc tcgggattat 1350

tgctcttctg tctataaatt ttgaatgata ctgtgcctta attggttttc 1400

atagtttaag tgtgtatcat tatcaaagtt gattaatttg gcttcatagt 1450

ataatgagag cagggctatt gtagttccca gattcaatcc accgaagtgt 1500

tcactgtcat ctgttaggga atttttgttt gtcctgtctt tgcctggatc 1550

catagcgaga gtgctctgta ttttttttaa gataatttgt atttttgcac 1600

actgagatat aataaaaggt gtttatcata aaaaaaaaaa aaaaaaaa 1648
```

<210> 210
<211> 323

195

<212> PRT
<213> Homo sapiens

<400> 210

```
Met Pro Leu Leu Lys Leu Val His Gly Ser Pro Leu Val Phe Gly
1               5                   10                  15

Glu Lys Phe Lys Leu Phe Thr Leu Val Ser Ala Cys Ile Pro Val
                20                  25                  30

Phe Arg Leu Ala Arg Arg Arg Lys Lys Ile Leu Phe Tyr Cys His
                35                  40                  45

Phe Pro Asp Leu Leu Leu Thr Lys Arg Asp Ser Phe Leu Lys Arg
                50                  55                  60

Leu Tyr Arg Ala Pro Ile Asp Trp Ile Glu Glu Tyr Thr Thr Gly
                65                  70                  75

Met Ala Asp Cys Ile Leu Val Asn Ser Gln Phe Thr Ala Ala Val
                80                  85                  90

Phe Lys Glu Thr Phe Lys Ser Leu Ser His Ile Asp Pro Asp Val
                95                  100                 105

Leu Tyr Pro Ser Leu Asn Val Thr Ser Phe Asp Ser Val Val Pro
                110                 115                 120

Glu Lys Leu Asp Asp Leu Val Pro Lys Gly Lys Lys Phe Leu Leu
                125                 130                 135

Leu Ser Ile Asn Arg Tyr Glu Arg Lys Lys Asn Leu Thr Leu Ala
                140                 145                 150

Leu Glu Ala Leu Val Gln Leu Arg Gly Arg Leu Thr Ser Gln Asp
                155                 160                 165

Trp Glu Arg Val His Leu Ile Val Ala Gly Gly Tyr Asp Glu Arg
                170                 175                 180

Val Leu Glu Asn Val Glu His Tyr Gln Glu Leu Lys Lys Met Val
                185                 190                 195

Gln Gln Ser Asp Leu Gly Gln Tyr Val Thr Phe Leu Arg Ser Phe
                200                 205                 210

Ser Asp Lys Gln Lys Ile Ser Leu Leu His Ser Cys Thr Cys Val
                215                 220                 225

Leu Tyr Thr Pro Ser Asn Glu His Phe Gly Ile Val Pro Leu Glu
                230                 235                 240

Ala Met Tyr Met Gln Cys Pro Val Ile Ala Val Asn Ser Gly Gly
                245                 250                 255

Pro Leu Glu Ser Ile Asp His Ser Val Thr Gly Phe Leu Cys Glu
                260                 265                 270
```

196

```
Pro Asp Pro Val His Phe Ser Glu Ala Ile Glu Lys Phe Ile Arg
            275             280             285

Glu Pro Ser Leu Lys Ala Thr Met Gly Leu Ala Gly Arg Ala Arg
            290             295             300

Val Lys Glu Lys Phe Ser Pro Glu Ala Phe Thr Glu Gln Leu Tyr
            305             310             315

Arg Tyr Val Thr Lys Leu Leu Val
            320
```

<210> 211
<211> 1554
<212> DNA
<213> Homo sapiens

<400> 211

```
gactacgccg atccgagacg tggctccctg ggcggcagaa ccatgttgga 50

cttcgcgatc ttcgccgtta ccttcttgct ggcgttggtg ggagccgtgc 100

tctacctcta tccggcttcc agacaagctg caggaattcc agggattact 150

ccaactgaag aaaaagatgg taatcttcca gatattgtga atagtggaag 200

tttgcatgag ttcctggtta atttgcatga gagatatggg cctgtggtct 250

ccttctggtt tggcaggcgc ctcgtggtta gtttgggcac tgttgatgta 300

ctgaagcagc atatcaatcc caataagaca tcggacccتt ttgaaaccat 350

gctgaagtca ttattaaggt atcaatctgg tggtggcagt gtgagtgaaa 400

accacatgag gaaaaaattg tatgaaaatg gtgtgactga ttctctgaag 450

agtaactttg ccctcctcct aaagctttca gaagaattat tagataaatg 500

gctctcctac ccagagaccc agcacgtgcc cctcagccag catatgcttg 550

gttttgctat gaagtctgtt acacagatgg taatgggtag tacatttgaa 600

gatgatcagg aagtcattcg cttccagaag aatcatggca cagtttggtc 650

tgagattgga aaaggctttc tagatgggtc acttgataaa aacatgactc 700

ggaaaaaaca atatgaagat gccctcatgc aactggagtc tgttttaagg 750

aacatcataa aagaacgaaa aggaaggaac ttcagtcaac atattttcat 800

tgactcctta gtacaaggga accttaatga ccaacagatc ctagaagaca 850

gtatgatatt ttctctggcc agttgcataa taactgcaaa attgtgtacc 900

tgggcaatct gttttttaac cacctctgaa gaagttcaaa aaaaattata 950

tgaagagata aaccaagttt ttggaaatgg tcctgttact ccagagaaaa 1000
```

197

```
ttgagcagct cagatattgt cagcatgtgc tttgtgaaac tgttcgaact 1050

gccaaactga ctccagtttc tgcccagctt caagatattg aaggaaaaat 1100

tgaccgattt attattccta gagagaccct cgtcctttat gcccttggtg 1150

tggtacttca ggatcctaat acttggccat ctccacacaa gtttgatcca 1200

gatcggtttg atgatgaatt agtaatgaaa acttttttcct cacttggatt 1250

ctcaggcaca caggagtgtc cagagttgag gtttgcatat atggtgacca 1300

cagtacttct tagtgtattg gtgaagagac tgcacctact ttctgtggag 1350

ggacaggtta ttgaaacaaa gtatgaactg gtaacatcat caagggaaga 1400

agcttggatc actgtctcaa agagatatta aaattttata catttaaaat 1450

cattgttaaa ttgattgagg aaaacaacca tttaaaaaaa atctatgttg 1500

aatccttta taaaccagta tcactttgta atataaacac ctatttgtac 1550

ttaa 1554
```

```
<210> 212
<211> 462
<212> PRT
<213> Homo sapiens

<400> 212
  Met Leu Asp Phe Ala Ile Phe Ala Val Thr Phe Leu Leu Ala Leu
  1               5                  10                   15

  Val Gly Ala Val Leu Tyr Leu Tyr Pro Ala Ser Arg Gln Ala Ala
                  20                  25                   30

  Gly Ile Pro Gly Ile Thr Pro Thr Glu Glu Lys Asp Gly Asn Leu
                  35                  40                   45

  Pro Asp Ile Val Asn Ser Gly Ser Leu His Glu Phe Leu Val Asn
                  50                  55                   60

  Leu His Glu Arg Tyr Gly Pro Val Val Ser Phe Trp Phe Gly Arg
                  65                  70                   75

  Arg Leu Val Val Ser Leu Gly Thr Val Asp Val Leu Lys Gln His
                  80                  85                   90

  Ile Asn Pro Asn Lys Thr Ser Asp Pro Phe Glu Thr Met Leu Lys
                  95                  100                  105

  Ser Leu Leu Arg Tyr Gln Ser Gly Gly Ser Val Ser Glu Asn
                  110                 115                  120

  His Met Arg Lys Lys Leu Tyr Glu Asn Gly Val Thr Asp Ser Leu
                  125                 130                  135

  Lys Ser Asn Phe Ala Leu Leu Leu Lys Leu Ser Glu Glu Leu Leu
```

198

```
                  140                        145                        150
Asp Lys Trp Leu Ser Tyr Pro Glu Thr Gln His Val Pro Leu Ser
                  155                        160                        165
Gln His Met Leu Gly Phe Ala Met Lys Ser Val Thr Gln Met Val
                  170                        175                        180
Met Gly Ser Thr Phe Glu Asp Asp Gln Glu Val Ile Arg Phe Gln
                  185                        190                        195
Lys Asn His Gly Thr Val Trp Ser Glu Ile Gly Lys Gly Phe Leu
                  200                        205                        210
Asp Gly Ser Leu Asp Lys Asn Met Thr Arg Lys Lys Gln Tyr Glu
                  215                        220                        225
Asp Ala Leu Met Gln Leu Glu Ser Val Leu Arg Asn Ile Ile Lys
                  230                        235                        240
Glu Arg Lys Gly Arg Asn Phe Ser Gln His Ile Phe Ile Asp Ser
                  245                        250                        255
Leu Val Gln Gly Asn Leu Asn Asp Gln Gln Ile Leu Glu Asp Ser
                  260                        265                        270
Met Ile Phe Ser Leu Ala Ser Cys Ile Ile Thr Ala Lys Leu Cys
                  275                        280                        285
Thr Trp Ala Ile Cys Phe Leu Thr Thr Ser Glu Glu Val Gln Lys
                  290                        295                        300
Lys Leu Tyr Glu Glu Ile Asn Gln Val Phe Gly Asn Gly Pro Val
                  305                        310                        315
Thr Pro Glu Lys Ile Glu Gln Leu Arg Tyr Cys Gln His Val Leu
                  320                        325                        330
Cys Glu Thr Val Arg Thr Ala Lys Leu Thr Pro Val Ser Ala Gln
                  335                        340                        345
Leu Gln Asp Ile Glu Gly Lys Ile Asp Arg Phe Ile Ile Pro Arg
                  350                        355                        360
Glu Thr Leu Val Leu Tyr Ala Leu Gly Val Val Leu Gln Asp Pro
                  365                        370                        375
Asn Thr Trp Pro Ser Pro His Lys Phe Asp Pro Asp Arg Phe Asp
                  380                        385                        390
Asp Glu Leu Val Met Lys Thr Phe Ser Ser Leu Gly Phe Ser Gly
                  395                        400                        405
Thr Gln Glu Cys Pro Glu Leu Arg Phe Ala Tyr Met Val Thr Thr
                  410                        415                        420
Val Leu Leu Ser Val Leu Val Lys Arg Leu His Leu Leu Ser Val
                  425                        430                        435
```

199

```
Glu Gly Gln Val Ile Glu Thr Lys Tyr Glu Leu Val Thr Ser Ser
            440                 445                 450

Arg Glu Glu Ala Trp Ile Thr Val Ser Lys Arg Tyr
            455                 460
```

<210> 213
<211> 759
<212> DNA
<213> Homo sapiens

<400> 213

```
ctagatttgt cggcttgcgg ggagacttca ggagtcgctg tctctgaact 50

tccagcctca gagaccgccg cccttgtccc cgagggccat gggccgggtc 100

tcagggcttg tgccctctcg cttcctgacg ctcctggcgc atctggtggt 150

cgtcatcacc ttattctggt cccgggacag caacatacag gcctgcctgc 200

ctctcacgtt caccccgag gagtatgaca agcaggacat tcagctggtg 250

gccgcgctct ctgtcaccct gggcctcttt gcagtggagc tggccggttt 300

cctctcagga gtctccatgt tcaacagcac ccagagcctc atctccattg 350

gggctcactg tagtgcatcc gtggccctgt ccttcttcat attcgagcgt 400

tgggagtgca ctacgtattg gtacattttt gtcttctgca gtgcccttcc 450

agctgtcact gaaatggctt tattcgtcac cgtctttggg ctgaaaaaga 500

aacccttctg attaccttca tgacgggaac ctaaggacga agcctacagg 550

ggcaagggcc gcttcgtatt cctggaagaa ggaaggcata ggcttcggtt 600

ttcccctcgg aaactgcttc tgctggagga tatgtgttgg aataattacg 650

tcttgagtct gggattatcc gcattgtatt tagtgctttg taataaaata 700

tgttttgtag taacattaag acttatatac agttttaggg gacaattaaa 750

aaaaaaaaa 759
```

<210> 214
<211> 140
<212> PRT
<213> Homo sapiens

<400> 214

```
Met Gly Arg Val Ser Gly Leu Val Pro Ser Arg Phe Leu Thr Leu
  1               5                  10                  15

Leu Ala His Leu Val Val Val Ile Thr Leu Phe Trp Ser Arg Asp
            20                  25                  30

Ser Asn Ile Gln Ala Cys Leu Pro Leu Thr Phe Thr Pro Glu Glu
            35                  40                  45
```

200

```
Tyr Asp Lys Gln Asp Ile Gln Leu Val Ala Ala Leu Ser Val Thr
              50                  55                      60

Leu Gly Leu Phe Ala Val Glu Leu Ala Gly Phe Leu Ser Gly Val
              65                  70                      75

Ser Met Phe Asn Ser Thr Gln Ser Leu Ile Ser Ile Gly Ala His
              80                  85                      90

Cys Ser Ala Ser Val Ala Leu Ser Phe Phe Ile Phe Glu Arg Trp
              95                 100                     105

Glu Cys Thr Thr Tyr Trp Tyr Ile Phe Val Phe Cys Ser Ala Leu
             110                 115                     120

Pro Ala Val Thr Glu Met Ala Leu Phe Val Thr Val Phe Gly Leu
             125                 130                     135

Lys Lys Lys Pro Phe
             140
```

<210> 215
<211> 697
<212> DNA
<213> Homo sapiens

<400> 215

```
 tcccggaccc tgccgccctg ccactatgtc ccgccgctct atgctgcttg 50

 cctgggctct ccccagcctc cttcgactcg gagcggctca ggagacagaa 100

 gacccggcct gctgcagccc catagtgccc cggaacgagt ggaaggccct 150

 ggcatcagag tgcgcccagc acctgagcct gcccttacgc tatgtggtgg 200

 tatcgcacac ggcgggcagc agctgcaaca ccccgcctc gtgccagcag 250

 caggcccgga atgtgcagca ctaccacatg aagacactgg ctggtgcga 300

 cgtgggctac aacttcctga ttggagaaga cgggctcgta tacgagggcc 350

 gtggctggaa cttcacgggt gcccactcag gtcacttatg gaaccccatg 400

 tccattggca tcagcttcat gggcaactac atggatcggg tgcccacacc 450

 ccaggccatc cgggcagccc agggtctact ggcctgcggt gtggctcagg 500

 gagccctgag gtccaactat gtgctcaaag acaccggga tgtgcagcgt 550

 acactctctc caggcaacca gctctaccac ctcatccaga attggccaca 600

 ctaccgctcc ccctgaggcc ctgctgatcc gcaccccatt cctcccctcc 650

 catggccaaa aaccccactg tctccttctc caataaagat gtagctc 697
```

<210> 216
<211> 196
<212> PRT

201

<213> Homo sapiens

<400> 216
```
Met Ser Arg Arg Ser Met Leu Leu Ala Trp Ala Leu Pro Ser Leu
  1               5                  10                  15

Leu Arg Leu Gly Ala Ala Gln Glu Thr Glu Asp Pro Ala Cys Cys
                 20                  25                  30

Ser Pro Ile Val Pro Arg Asn Glu Trp Lys Ala Leu Ala Ser Glu
                 35                  40                  45

Cys Ala Gln His Leu Ser Leu Pro Leu Arg Tyr Val Val Val Ser
                 50                  55                  60

His Thr Ala Gly Ser Ser Cys Asn Thr Pro Ala Ser Cys Gln Gln
                 65                  70                  75

Gln Ala Arg Asn Val Gln His Tyr His Met Lys Thr Leu Gly Trp
                 80                  85                  90

Cys Asp Val Gly Tyr Asn Phe Leu Ile Gly Glu Asp Gly Leu Val
                 95                 100                 105

Tyr Glu Gly Arg Gly Trp Asn Phe Thr Gly Ala His Ser Gly His
                110                 115                 120

Leu Trp Asn Pro Met Ser Ile Gly Ile Ser Phe Met Gly Asn Tyr
                125                 130                 135

Met Asp Arg Val Pro Thr Pro Gln Ala Ile Arg Ala Ala Gln Gly
                140                 145                 150

Leu Leu Ala Cys Gly Val Ala Gln Gly Ala Leu Arg Ser Asn Tyr
                155                 160                 165

Val Leu Lys Gly His Arg Asp Val Gln Arg Thr Leu Ser Pro Gly
                170                 175                 180

Asn Gln Leu Tyr His Leu Ile Gln Asn Trp Pro His Tyr Arg Ser
                185                 190                 195

Pro
```

<210> 217
<211> 1871
<212> DNA
<213> Homo sapiens

<400> 217
```
ctgggacccc gaaaagagaa ggggagagcg aggggacgag agcggaggag 50

gaagatgcaa ctgactcgct gctgcttcgt gttcctggtg cagggtagcc 100

tctatctggt catctgtggc caggatgatg gtcctcccgg ctcagaggac 150

cctgagcgtg atgaccacga gggccagccc cggccccggg tgcctcggaa 200
```

202

```
gcggggccac atctcaccta agtcccgccc catggccaat tccactctcc 250

tagggctgct ggccccgcct ggggaggctt ggggcattct tgggcagccc 300

cccaaccgcc cgaaccacag ccccccaccc tcagccaagg tgaagaaaat 350

ctttggctgg ggcgacttct actccaacat caagacggtg gccctgaacc 400

tgctcgtcac agggaagatt gtggaccatg gcaatgggac cttcagcgtc 450

cacttccaac acaatgccac aggccaggga aacatctcca tcagcctcgt 500

gcccccagt aaagctgtag agttccacca ggaacagcag atcttcatcg 550

aagccaaggc ctccaaaatc ttcaactgcc ggatggagtg ggagaaggta 600

gaacggggcc gccggacctc gctttgcacc cacgacccag ccaagatctg 650

ctcccgagac cacgctcaga gctcagccac ctggagctgc tcccagccct 700

tcaaagtcgt ctgtgtctac atcgccttct acagcacgga ctatcggctg 750

gtccagaagg tgtgcccaga ttacaactac catagtgata cccccTacta 800

cccatctggg tgacccgggg caggccacag aggccaggcc agggctggaa 850

ggacaggcct gcccatgcag gagaccatct ggacaccggg cagggaaggg 900

gttgggcctc aggcagggag ggggGtggag acgaggagat gccaagtggg 950

gccagggcca agtctcaagt ggcagagaaa gggtcccaag tgctggtccc 1000

aacctgaagc tgtggagtga ctagatcaca ggagcactgg aggaggagtg 1050

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gcaacaggga gggggagatt tcatcagtgt ggacagcctg tcaacttagg 1250

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gccagaggag ctctccagcc ctgcctagtg ggcgccctga gccccttgtc 1350

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cccatcctta agctaagaca ggacgattgt ggtcctccca cactaaggcc 1550

acagcccatc cgcgtgctgt gtgtccctct tccaccccaa cccctgctgg 1600

ctcctctggg agcatccatg tcccggagag gggtccctca acagtcagcc 1650
```

203

```
tcacctgtca gaccgggggtt ctcccggatc tggatggcgc cgccctctca 1700

gcagcgggca cgggtggggc ggggccgggc cgcagagcat gtgctggatc 1750

tgttctgtgt gtctgtctgt gggtggggggg aggggaggga agtcttgtga 1800

aaccgctgat tgctgacttt tgtgtgaaga atcgtgttct tggagcagga 1850 ·

aataaagctt gccccgggggc a 1871
```

<210> 218
<211> 252
<212> PRT
<213> Homo sapiens

<400> 218

```
Met Gln Leu Thr Arg Cys Cys Phe Val Phe Leu Val Gln Gly Ser
 1               5                10                  15

Leu Tyr Leu Val Ile Cys Gly Gln Asp Asp Gly Pro Pro Gly Ser
             20                25                  30

Glu Asp Pro Glu Arg Asp Asp His Glu Gly Gln Pro Arg Pro Arg
             35                40                  45

Val Pro Arg Lys Arg Gly His Ile Ser Pro Lys Ser Arg Pro Met
             50                55                  60

Ala Asn Ser Thr Leu Leu Gly Leu Leu Ala Pro Pro Gly Glu Ala
             65                70                  75

Trp Gly Ile Leu Gly Gln Pro Pro Asn Arg Pro Asn His Ser Pro
             80                85                  90

Pro Pro Ser Ala Lys Val Lys Lys Ile Phe Gly Trp Gly Asp Phe
             95               100                 105

Tyr Ser Asn Ile Lys Thr Val Ala Leu Asn Leu Leu Val Thr Gly
            110               115                 120

Lys Ile Val Asp His Gly Asn Gly Thr Phe Ser Val His Phe Gln
            125               130                 135

His Asn Ala Thr Gly Gln Gly Asn Ile Ser Ile Ser Leu Val Pro
            140               145                 150

Pro Ser Lys Ala Val Glu Phe His Gln Glu Gln Gln Ile Phe Ile
            155               160                 165

Glu Ala Lys Ala Ser Lys Ile Phe Asn Cys Arg Met Glu Trp Glu
            170               175                 180

Lys Val Glu Arg Gly Arg Arg Thr Ser Leu Cys Thr His Asp Pro
            185               190                 195

Ala Lys Ile Cys Ser Arg Asp His Ala Gln Ser Ser Ala Thr Trp
            200               205                 210
```

Ser Cys Ser Gln Pro Phe Lys Val Val Cys Val Tyr Ile Ala Phe
                215   220   225

Tyr Ser Thr Asp Tyr Arg Leu Val Gln Lys Val Cys Pro Asp Tyr
                230   235   240

Asn Tyr His Ser Asp Thr Pro Tyr Tyr Pro Ser Gly
                245   250

<210> 219
<211> 2065
<212> DNA
<213> Homo sapiens

<400> 219
gtgaatgtga gggtttgatg actttcagat gtctaggaac cagagtgggt 50

gcaggggccc caggcagggc tgattcttgg gcggaggaga gtagggtaaa 100

gggttctgca tgagctcctt aaaggacaaa ggtaacagag ccagcgagag 150

agctcgaggg gagactttga cttcaagcca cagaattggt ggaagtgtgc 200

gcgccgccgc cgccgtcgct cctgcagcgc tgtcgaccta ccgctagca 250

tcttcccgag caccgggatc ccggggtagg aggcgacgcg ggcgagcacc 300

agcgccagcc ggctgcggct gcccacacgg ctcaccatgg ctccgggcg 350

ccgggcgctg tccgcggtgc cggccgtgct gctggtcctc acgctgccgg 400

ggctgcccgt ctgggcacag aacgacacgg agcccatcgt gctggagggc 450

aagtgtctgg tggtgtgcga ctcgaacccg gccacggact ccaagggctc 500

ctcttcctcc ccgctgggga tatcggtccg ggcggccaac tccaaggtcg 550

ccttctcggc ggtgcggagc accaaccacg agccatccga gatgagcaac 600

aagacgcgca tcatttactt cgatcagatc ctggtgaatg tgggtaattt 650

tttcacattg gagtctgtct ttgtagcacc aagaaaagga atttacagtt 700

tcagttttca cgtgattaaa gtctaccaga gccaaactat ccaggttaac 750

ttgatgttaa atggaaaacc agtaatatct gcctttgcgg gggacaaaga 800

tgttactcgt gaagctgcca cgaatggtgt cctgctctac ctagataaag 850

aggataaggt ttacctaaaa ctggagaaag gtaatttggt tggaggctgg 900

cagtattcca cgttttctgg ctttctggtg ttccccctat aggattcaat 950

ttctccatga tgttcatcca ggtgagggat gacccactcc tgagttattg 1000

gaagatcatt ttttcatcat tggattgatg tcttttattg gtttctcatg 1050

ggtggatatg gattctaagg attctagcct gtctgaacca atacaaaatt 1100

205

tcacagatta tttgtgtgtg tctgtttcag tatatttgga ttgggactct 1150

aagcagataa tacctatgct taaatgtaac agtcaaaagc tgtctgcaag 1200

acttattctg aatttcattt cctgggatta ctgaattagt tacagatgtg 1250

gaattttatt tgtttagttt taaaagactg gcaaccaggt ctaaggatta 1300

gaaaactcta aagttctgac ttcaatcaac ggttagtgtg atactgccaa 1350

agaactgtat actgtgttaa tatattgatt atatttgttt ttattccttt 1400

ggaattagtt tgtttggttc ttgtaaaaaa cttggatttt ttttttcagt 1450

aactggtatt atgttttctc ttaaaataag gtaatgaatg cttgcccac 1500

aaatttacct tgactacgat atcatcgaca tgacttctct caaaaaaaaa 1550

gaatgcttca tagttgtatt ttaattgtat atgtgaaaga gtcatatttt 1600

ccaagttata ttttctaaga agaagaatag atcataaatc tgacaaggaa 1650

aaagttgctt acccaaaatc taagtgctca atccctgagc ctcagcaaaa 1700

cagctcccct ccgagggaaa tcttatactt tattgctcaa ctttaattaa 1750

aatgattgat aataaccact ttattaaaaa cctaaggttt ttttttttc 1800

cgtagacatg accactttat taactggtgg tgggatgctg ttgtttctaa 1850

ttatacctat ttttcaaggc ttctgttgta tttgaagtat catctggttt 1900

tgccttaact ctttaaattg tatatattta tctgtttagc taatattaaa 1950

ttcaaatatc ccatatctaa atttagtgca atatcttgtc ttttgtatag 2000

gtcatatgaa ttcataaaat tatttatgtc tgttatagaa taaagattaa 2050

tatatgttaa aaaaa 2065

<210> 220
<211> 201
<212> PRT
<213> Homo sapiens

<400> 220
Met Gly Ser Gly Arg Arg Ala Leu Ser Ala Val Pro Ala Val Leu
 1   5   10   15

Leu Val Leu Thr Leu Pro Gly Leu Pro Val Trp Ala Gln Asn Asp
                20   25   30

Thr Glu Pro Ile Val Leu Glu Gly Lys Cys Leu Val Val Cys Asp
                35   40   45

Ser Asn Pro Ala Thr Asp Ser Lys Gly Ser Ser Ser Ser Pro Leu
                50   55   60

```
Gly Ile Ser Val Arg Ala Ala Asn Ser Lys Val Ala Phe Ser Ala
                65              70              75

Val Arg Ser Thr Asn His Glu Pro Ser Glu Met Ser Asn Lys Thr
                80              85              90

Arg Ile Ile Tyr Phe Asp Gln Ile Leu Val Asn Val Gly Asn Phe
                95             100             105

Phe Thr Leu Glu Ser Val Phe Val Ala Pro Arg Lys Gly Ile Tyr
               110             115             120

Ser Phe Ser Phe His Val Ile Lys Val Tyr Gln Ser Gln Thr Ile
               125             130             135

Gln Val Asn Leu Met Leu Asn Gly Lys Pro Val Ile Ser Ala Phe
               140             145             150

Ala Gly Asp Lys Asp Val Thr Arg Glu Ala Ala Thr Asn Gly Val
               155             160             165

Leu Leu Tyr Leu Asp Lys Glu Asp Lys Val Tyr Leu Lys Leu Glu
               170             175             180

Lys Gly Asn Leu Val Gly Gly Trp Gln Tyr Ser Thr Phe Ser Gly
               185             190             195

Phe Leu Val Phe Pro Leu
               200
```

<210> 221
<211> 20
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-20
<223> Synthetic construct.

<400> 221
 acggctcacc atgggctccg 20

<210> 222
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 222
 aggaagagga gcccttggag tccg 24

<210> 223
<211> 40

207

<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-40
<223> Synthetic construct.

<400> 223
 cgtgctggag ggcaagtgtc tggtggtgtg cgactcgaac 40

<210> 224
<211> 902
<212> DNA
<213> Homo sapiens

<400> 224
 cggtggccat gactgcggcc gtgttcttcg gctgcgcctt cattgccttc 50

 gggcctgcgc tcgcccttta tgtcttcacc atcgccatcg agccgttgcg 100

 tatcatcttc ctcatcgccg gagctttctt ctggttggtg tctctactga 150

 tttcgtccct tgtttggttc atggcaagag tcattattga caacaaagat 200

 ggaccaacac agaaatatct gctgatcttt ggagcgtttg tctctgtcta 250

 tatccaagaa atgttccgat ttgcatatta taaactctta aaaaaagcca 300

 gtgaaggttt gaagagtata aacccaggtg agacagcacc ctctatgcga 350

 ctgctggcct atgtttctgg cttgggcttt ggaatcatga gtggagtatt 400

 ttcctttgtg aataccctat ctgactcctt ggggccaggc acagtgggca 450

 ttcatggaga ttctcctcaa ttcttccttt attcagcttt catgacgctg 500

 gtcattatct tgctgcatgt attctggggc attgtatttt ttgatggctg 550

 tgagaagaaa aagtggggca tcctccttat cgttctcctg acccacctgc 600

 tggtgtcagc ccagaccttc ataagttctt attatggaat aaacctggcg 650

 tcagcattta taatcctggt gctcatgggc acctgggcat tcttagctgc 700

 gggaggcagc tgccgaagcc tgaaactctg cctgctctgc caagacaaga 750

 actttcttct ttacaaccag cgctccagat aacctcaggg aaccagcact 800

 tcccaaaccg cagactacat ctttagagga agcacaactg tgccttttc 850

 tgaaaatccc tttttctggt ggaattgaga aagaaataaa actatgcaga 900

 ta 902

<210> 225
<211> 257
<212> PRT

<210> Homo sapiens

<400> 225

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Met Thr Ala Ala Val Phe Phe Gly Cys Ala Phe Ile Ala Phe Gly
  1           5               10              15

Pro Ala Leu Ala Leu Tyr Val Phe Thr Ile Ala Ile Glu Pro Leu
             20              25              30

Arg Ile Ile Phe Leu Ile Ala Gly Ala Phe Phe Trp Leu Val Ser
             35              40              45

Leu Leu Ile Ser Ser Leu Val Trp Phe Met Ala Arg Val Ile Ile
             50              55              60

Asp Asn Lys Asp Gly Pro Thr Gln Lys Tyr Leu Leu Ile Phe Gly
             65              70              75

Ala Phe Val Ser Val Tyr Ile Gln Glu Met Phe Arg Phe Ala Tyr
             80              85              90

Tyr Lys Leu Leu Lys Lys Ala Ser Glu Gly Leu Lys Ser Ile Asn
             95             100             105

Pro Gly Glu Thr Ala Pro Ser Met Arg Leu Leu Ala Tyr Val Ser
            110             115             120

Gly Leu Gly Phe Gly Ile Met Ser Gly Val Phe Ser Phe Val Asn
            125             130             135

Thr Leu Ser Asp Ser Leu Gly Pro Gly Thr Val Gly Ile His Gly
            140             145             150

Asp Ser Pro Gln Phe Phe Leu Tyr Ser Ala Phe Met Thr Leu Val
            155             160             165

Ile Ile Leu Leu His Val Phe Trp Gly Ile Val Phe Phe Asp Gly
            170             175             180

Cys Glu Lys Lys Lys Trp Gly Ile Leu Leu Ile Val Leu Leu Thr
            185             190             195

His Leu Leu Val Ser Ala Gln Thr Phe Ile Ser Ser Tyr Tyr Gly
            200             205             210

Ile Asn Leu Ala Ser Ala Phe Ile Ile Leu Val Leu Met Gly Thr
            215             220             225

Trp Ala Phe Leu Ala Ala Gly Gly Ser Cys Arg Ser Leu Lys Leu
            230             235             240

Cys Leu Leu Cys Gln Asp Lys Asn Phe Leu Leu Tyr Asn Gln Arg
            245             250             255

Ser Arg
```

<210> 226

<211> 3939
<212> DNA
<213> Homo sapiens

<400> 226
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cggcaaccag ccgccgccac caccgctgcc actgccgccc tgccggggcc 50

atgttcgctc tgggcttgcc cttcttggtg ctcttggtgg cctcggtcga 100

gagccatctg ggggttctgg ggcccaagaa cgtctcgcag aaagacgccg 150

agtttgagcg cacctacgtg gacgaggtca acagcgagct ggtcaacatc 200

tacaccttca accatactgt gacccgcaac aggacagagg gcgtgcgtgt 250

gtctgtgaac gtcctgaaca agcagaaggg ggcgccgttg ctgtttgtgg 300

tccgccagaa ggaggctgtg gtgtccttcc aggtgcccct aatcctgcga 350

gggatgtttc agcgcaagta cctctaccaa aaagtggaac gaaccctgtg 400

tcagcccccc accaagaatg agtcggagat tcagttcttc tacgtggatg 450

tgtccaccct gtcaccagtc aacaccacat accagctccg ggtcagccgc 500

atggacgatt ttgtgctcag gactgggggag cagttcagct tcaataccac 550

agcagcacag ccccagtact tcaagtatga gttccctgaa ggcgtggact 600

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cttcatcggc atgtaccaga cgatgaccaa gaaggcggcc atcaccgtac 750

agcgcaaaga cttccccagc aacagctttt atgtggtggt ggtggtgaag 800

accgaagacc aagcctgcgg gggctccctg cctttctacc ccttcgcaga 850

agatgaaccg gtcgatcaag ggcaccgcca gaaaaccctg tcagtgctgg 900

tgtctcaagc agtcacgtct gaggcatacg tcagtgggat gctcttttgc 950

ctgggtatat ttctctcctt ttacctgctg accgtcctcc tggcctgctg 1000

ggagaactgg aggcagaaga agaagaccct gctggtggcc attgaccgag 1050

cctgcccaga aagcggtcac cctcgagtcc tggctgattc ttttcctggc 1100

agttcccctt atgagggtta caactatggc tcctttgaga atgtttctgg 1150

atctaccgat ggtctggttg acagcgctgg cactggggac ctctcttacg 1200

gttaccaggg ccgctccttt gaacctgtag gtactcggcc ccgagtggac 1250

tccatgagct ctgtggagga ggatgactac gacacattga ccgacatcga 1300

ttccgacaag aatgtcattc gcaccaagca atacctctat gtggctgacc 1350
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210

```
tggcacggaa ggacaagcgt gttctgcgga aaaagtacca gatctacttc 1400

tggaacattg ccaccattgc tgtcttctat gcccttcctg tggtgcagct 1450

ggtgatcacc taccagacgg tggtgaatgt cacagggaat caggacatct 1500

gctactacaa cttcctctgc gcccacccac tgggcaatct cagcgccttc 1550

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ttctcagtgt tggggccttc catgggcccc tgtcctttgg ctctccattt 2850

gtccctttgc aagaggaagg atggaaggga caccctcccc atttcatgcc 2900

ttgcattttg cccgtcctcc tccccacaat gccccagcct gggacctaag 2950

gcctcttttt cctcccatac tcccactcca gggcctagtc tggggcctga 3000

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cctggggcag tgcgtattct cttccctctg acctgtgctc agggctggct 3200

ctttagcaat gcgctcagcc caatttgaga accgccttct gattcaagag 3250

gctgaattca gaggtcacct cttcatccca tcagctccca gactgatgcc 3300

agcaccagga ctggagggag aagcgcctca ccccttccct tccttctttc 3350

caggcccctta gtcttgccaa accccagctg gtggcctttc agtgccattg 3400

acactgccca agaatgtcca ggggcaaagg agggatgata cagagttcag 3450

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cgctctagga cccagggctg gcttctaagt ttccgtccag tcttcaggca 3600

agttctgtgt tagtcatgca cacacatacc tatgaaacct tggagtttac 3650

aaagaattgc cccagctctg ggcaccctgg ccaccctggt ccttggatcc 3700

ccttcgtccc acctggtcca ccccagatgc tgaggatggg ggagctcagg 3750

cggggcctct gctttgggga tgggaatgtg tttttctccc aaacttgttt 3800

ttatagctct gcttgaaggg ctgggagatg aggtgggtct ggatctttc 3850

tcagagcgtc tccatgctat ggttgcattt ccgtttctta tgaatgaatt 3900

tgcattcaat aaacaaccag actcaaaaaa aaaaaaaaa 3939
```

<210> 227
<211> 832
<212> PRT
<213> Homo sapiens

<400> 227

```
Met Phe Ala Leu Gly Leu Pro Phe Leu Val Leu Leu Val Ala Ser
 1               5                  10                  15

Val Glu Ser His Leu Gly Val Leu Gly Pro Lys Asn Val Ser Gln
                 20                  25                  30
```

212

Lys Asp Ala Glu Phe Glu Arg Thr Tyr Val Asp Glu Val Asn Ser
                         35   40   45

Glu Leu Val Asn Ile Tyr Thr Phe Asn His Thr Val Thr Arg Asn
                         50   55   60

Arg Thr Glu Gly Val Arg Val Ser Val Asn Val Leu Asn Lys Gln
                         65   70   75

Lys Gly Ala Pro Leu Leu Phe Val Val Arg Gln Lys Glu Ala Val
                         80   85   90

Val Ser Phe Gln Val Pro Leu Ile Leu Arg Gly Met Phe Gln Arg
                         95   100   105

Lys Tyr Leu Tyr Gln Lys Val Glu Arg Thr Leu Cys Gln Pro Pro
                       110   115   120

Thr Lys Asn Glu Ser Glu Ile Gln Phe Phe Tyr Val Asp Val Ser
                       125   130   135

Thr Leu Ser Pro Val Asn Thr Thr Tyr Gln Leu Arg Val Ser Arg
                       140   145   150

Met Asp Asp Phe Val Leu Arg Thr Gly Glu Gln Phe Ser Phe Asn
                       155   160   165

Thr Thr Ala Ala Gln Pro Gln Tyr Phe Lys Tyr Glu Phe Pro Glu
                       170   175   180

Gly Val Asp Ser Val Ile Val Lys Val Thr Ser Asn Lys Ala Phe
                       185   190   195

Pro Cys Ser Val Ile Ser Ile Gln Asp Val Leu Cys Pro Val Tyr
                       200   205   210

Asp Leu Asp Asn Asn Val Ala Phe Ile Gly Met Tyr Gln Thr Met
                       215   220   225

Thr Lys Lys Ala Ala Ile Thr Val Gln Arg Lys Asp Phe Pro Ser
                       230   235   240

Asn Ser Phe Tyr Val Val Val Val Val Lys Thr Glu Asp Gln Ala
                       245   250   255

Cys Gly Gly Ser Leu Pro Phe Tyr Pro Phe Ala Glu Asp Glu Pro
                       260   265   270

Val Asp Gln Gly His Arg Gln Lys Thr Leu Ser Val Leu Val Ser
                       275   280   285

Gln Ala Val Thr Ser Glu Ala Tyr Val Ser Gly Met Leu Phe Cys
                       290   295   300

Leu Gly Ile Phe Leu Ser Phe Tyr Leu Leu Thr Val Leu Leu Ala
                       305   310   315

Cys Trp Glu Asn Trp Arg Gln Lys Lys Lys Thr Leu Leu Val Ala

```
                    320                      325                      330
    Ile Asp Arg Ala Cys Pro Glu Ser Gly His Pro Arg Val Leu Ala
                    335                      340                      345
    Asp Ser Phe Pro Gly Ser Ser Pro Tyr Glu Gly Tyr Asn Tyr Gly
                    350                      355                      360
    Ser Phe Glu Asn Val Ser Gly Ser Thr Asp Gly Leu Val Asp Ser
                    365                      370                      375
    Ala Gly Thr Gly Asp Leu Ser Tyr Gly Tyr Gln Gly Arg Ser Phe
                    380                      385                      390
    Glu Pro Val Gly Thr Arg Pro Arg Val Asp Ser Met Ser Ser Val
                    395                      400                      405
    Glu Glu Asp Asp Tyr Asp Thr Leu Thr Asp Ile Asp Ser Asp Lys
                    410                      415                      420
    Asn Val Ile Arg Thr Lys Gln Tyr Leu Tyr Val Ala Asp Leu Ala
                    425                      430                      435
    Arg Lys Asp Lys Arg Val Leu Arg Lys Lys Tyr Gln Ile Tyr Phe
                    440                      445                      450
    Trp Asn Ile Ala Thr Ile Ala Val Phe Tyr Ala Leu Pro Val Val
                    455                      460                      465
    Gln Leu Val Ile Thr Tyr Gln Thr Val Val Asn Val Thr Gly Asn
                    470                      475                      480
    Gln Asp Ile Cys Tyr Tyr Asn Phe Leu Cys Ala His Pro Leu Gly
                    485                      490                      495
    Asn Leu Ser Ala Phe Asn Asn Ile Leu Ser Asn Leu Gly Tyr Ile
                    500                      505                      510
    Leu Leu Gly Leu Leu Phe Leu Leu Ile Ile Leu Gln Arg Glu Ile
                    515                      520                      525
    Asn His Asn Arg Ala Leu Leu Arg Asn Asp Leu Cys Ala Leu Glu
                    530                      535                      540
    Cys Gly Ile Pro Lys His Phe Gly Leu Phe Tyr Ala Met Gly Thr
                    545                      550                      555
    Ala Leu Met Met Glu Gly Leu Leu Ser Ala Cys Tyr His Val Cys
                    560                      565                      570
    Pro Asn Tyr Thr Asn Phe Gln Phe Asp Thr Ser Phe Met Tyr Met
                    575                      580                      585
    Ile Ala Gly Leu Cys Met Leu Lys Leu Tyr Gln Lys Arg His Pro
                    590                      595                      600
    Asp Ile Asn Ala Ser Ala Tyr Ser Ala Tyr Ala Cys Leu Ala Ile
                    605                      610                      615
```

214

```
Val Ile Phe Phe Ser Val Leu Gly Val Val Phe Gly Lys Gly Asn
              620                 625                 630

Thr Ala Phe Trp Ile Val Phe Ser Ile Ile His Ile Ile Ala Thr
              635                 640                 645

Leu Leu Leu Ser Thr Gln Leu Tyr Tyr Met Gly Arg Trp Lys Leu
              650                 655                 660

Asp Ser Gly Ile Phe Arg Arg Ile Leu His Val Leu Tyr Thr Asp
              665                 670                 675

Cys Ile Arg Gln Cys Ser Gly Pro Leu Tyr Val Asp Arg Met Val
              680                 685                 690

Leu Leu Val Met Gly Asn Val Ile Asn Trp Ser Leu Ala Ala Tyr
              695                 700                 705

Gly Leu Ile Met Arg Pro Asn Asp Phe Ala Ser Tyr Leu Leu Ala
              710                 715                 720

Ile Gly Ile Cys Asn Leu Leu Leu Tyr Phe Ala Phe Tyr Ile Ile
              725                 730                 735

Met Lys Leu Arg Ser Gly Glu Arg Ile Lys Leu Ile Pro Leu Leu
              740                 745                 750

Cys Ile Val Cys Thr Ser Val Val Trp Gly Phe Ala Leu Phe Phe
              755                 760                 765

Phe Phe Gln Gly Leu Ser Thr Trp Gln Lys Thr Pro Ala Glu Ser
              770                 775                 780

Arg Glu His Asn Arg Asp Cys Ile Leu Leu Asp Phe Phe Asp Asp
              785                 790                 795

His Asp Ile Trp His Phe Leu Ser Ser Ile Ala Met Phe Gly Ser
              800                 805                 810

Phe Leu Val Leu Leu Thr Leu Asp Asp Asp Leu Asp Thr Val Gln
              815                 820                 825

Arg Asp Lys Ile Tyr Val Phe
              830
```

<210> 228
<211> 2848
<212> DNA
<213> Homo sapiens

<400> 228
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 gctcaagtgc cctgccttgc cccacccagc ccagcctggc cagagccccc 50

 tggagaagga gctctcttct tgcttggcag ctggaccaag ggagccagtc 100

 ttgggcgctg gagggcctgt cctgaccatg gtccctgcct ggctgtggct 150

 gctttgtgtc tccgtccccc aggctctccc caaggcccag cctgcagagc 200
```

215

```
tgtctgtgga agttccagaa aactatggtg gaaatttccc tttatacctg 250

accaagttgc cgctgccccg tgagggggct gaaggccaga tcgtgctgtc 300

aggggactca ggcaaggcaa ctgagggccc atttgctatg gatccagatt 350

ctggcttcct gctggtgacc agggccctgg accgagagga gcaggcagag 400

taccagctac aggtcaccct ggagatgcag gatggacatg tcttgtgggg 450

tccacagcct gtgcttgtgc acgtgaagga tgagaatgac caggtgcccc 500

atttctctca agccatctac agagctcggc tgagccgggg taccaggcct 550

ggcatcccct tcctcttcct tgaggcttca gaccgggatg agccaggcac 600

agccaactcg gatcttcgat tccacatcct gagccaggct ccagcccagc 650

cttccccaga catgttccag ctggagcctc ggctgggggc tctggccctc 700

agccccaagg ggagcaccag ccttgaccac gccctggaga ggacctacca 750

gctgttggta caggtcaagg acatgggtga ccaggcctca ggccaccagg 800

ccactgccac cgtggaagtc tccatcatag agagcacctg ggtgtcccta 850

gagcctatcc acctggcaga gaatctcaaa gtcctatacc cgcaccacat 900

ggcccaggta cactggagtg ggggtgatgt gcactatcac ctggagagcc 950

atccccggg accctttgaa gtgaatgcag agggaaacct ctacgtgacc 1000

agagagctgg acagagaagc ccaggctgag tacctgctcc aggtgcgggc 1050

tcagaattcc catggcgagg actatgcggc ccctctggag ctgcacgtgc 1100

tggtgatgga tgagaatgac aacgtgccta tctgccctcc ccgtgacccc 1150

acagtcagca tccctgagct cagtccacca ggtactgaag tgactagact 1200

gtcagcagag gatgcagatg ccccccggctc ccccaattcc cacgttgtgt 1250

atcagctcct gagccctgag cctgaggatg gggtagaggg gagagccttc 1300

caggtggacc ccacttcagg cagtgtgacg ctggggggtgc tcccactccg 1350

agcaggccag aacatcctgc ttctggtgct ggccatggac ctggcaggcg 1400

cagagggtgg cttcagcagc acgtgtgaag tcgaagtcgc agtcacagat 1450

atcaatgatc acgcccctga gttcatcact tcccagattg ggcctataag 1500

cctccctgag gatgtggagc ccgggactct ggtggccatg ctaacagcca 1550

ttgatgctga cctcgagccc gccttccgcc tcatggattt tgccattgag 1600

aggggagaca cagaagggac ttttggcctg gattgggagc cagactctgg 1650
```

216

```
gcatgttaga ctcagactct gcaagaacct cagttatgag gcagctccaa 1700

gtcatgaggt ggtggtggtg gtgcagagtg tggcgaagct ggtggggcca 1750

ggcccaggcc ctggagccac cgccacggtg actgtgctag tggagagagt 1800

gatgccaccc cccaagttgg accaggagag ctacgaggcc agtgtcccca 1850

tcagtgcccc agccggctct ttcctgctga ccatccagcc ctccgacccc 1900

atcagccgaa ccctcaggtt ctccctagtc aatgactcag agggctggct 1950

ctgcattgag aaattctccg gggaggtgca caccgcccag tccctgcagg 2000

gcgcccagcc tggggacacc tacacggtgc ttgtggaggc ccaggataca 2050

gccctgactc ttgcccctgt gccctcccaa tacctctgca cacccccgcca 2100

agaccatggc ttgatcgtga gtggacccag caaggacccc gatctggcca 2150

gtgggcacgg tccctacagc ttcacccttg gtcccaaccc cacggtgcaa 2200

cgggattggc gcctccagac tctcaatggt tcccatgcct acctcacctt 2250

ggccctgcat tgggtggagc cacgtgaaca cataatcccc gtggtggtca 2300

gccacaatgc ccagatgtgg cagctcctgg ttcgagtgat cgtgtgtcgc 2350

tgcaacgtgg aggggcagtg catgcgcaag gtgggccgca tgaagggcat 2400

gcccacgaag ctgtcggcag tgggcatcct tgtaggcacc ctggtagcaa 2450

taggaatctt cctcatcctc attttcaccc actggaccat gtcaaggaag 2500

aaggacccgg atcaaccagc agacagcgtg cccctgaagg cgactgtctg 2550

aatggcccag gcagctctag ctgggagctt ggcctctggc tccatctgag 2600

tcccctggga gagagcccag cacccaagat ccagcagggg acaggacaga 2650

gtagaagccc ctccatctgc cctggggtgg aggcaccatc accatcacca 2700

ggcatgtctg cagagcctgg acaccaactt tatggactgc ccatgggagt 2750

gctccaaatg tcagggtgtt tgcccaataa taaagcccca gagaactggg 2800

ctgggcccta tgggaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaag 2848
```

<210> 229
<211> 807
<212> PRT
<213> Homo sapiens

<400> 229
```
Met Val Pro Ala Trp Leu Trp Leu Leu Cys Val Ser Val Pro Gln
 1               5                  10                  15

Ala Leu Pro Lys Ala Gln Pro Ala Glu Leu Ser Val Glu Val Pro
```

217

```
                    20                      25                      30
Glu Asn Tyr Gly Gly Asn Phe Pro Leu Tyr Leu Thr Lys Leu Pro
                35                      40                      45
Leu Pro Arg Glu Gly Ala Glu Gly Gln Ile Val Leu Ser Gly Asp
                50                      55                      60
Ser Gly Lys Ala Thr Glu Gly Pro Phe Ala Met Asp Pro Asp Ser
                65                      70                      75
Gly Phe Leu Leu Val Thr Arg Ala Leu Asp Arg Glu Glu Gln Ala
                80                      85                      90
Glu Tyr Gln Leu Gln Val Thr Leu Glu Met Gln Asp Gly His Val
                95                     100                     105
Leu Trp Gly Pro Gln Pro Val Leu Val His Val Lys Asp Glu Asn
               110                     115                     120
Asp Gln Val Pro His Phe Ser Gln Ala Ile Tyr Arg Ala Arg Leu
               125                     130                     135
Ser Arg Gly Thr Arg Pro Gly Ile Pro Phe Leu Phe Leu Glu Ala
               140                     145                     150
Ser Asp Arg Asp Glu Pro Gly Thr Ala Asn Ser Asp Leu Arg Phe
               155                     160                     165
His Ile Leu Ser Gln Ala Pro Ala Gln Pro Ser Pro Asp Met Phe
               170                     175                     180
Gln Leu Glu Pro Arg Leu Gly Ala Leu Ala Leu Ser Pro Lys Gly
               185                     190                     195
Ser Thr Ser Leu Asp His Ala Leu Glu Arg Thr Tyr Gln Leu Leu
               200                     205                     210
Val Gln Val Lys Asp Met Gly Asp Gln Ala Ser Gly His Gln Ala
               215                     220                     225
Thr Ala Thr Val Glu Val Ser Ile Ile Glu Ser Thr Trp Val Ser
               230                     235                     240
Leu Glu Pro Ile His Leu Ala Glu Asn Leu Lys Val Leu Tyr Pro
               245                     250                     255
His His Met Ala Gln Val His Trp Ser Gly Gly Asp Val His Tyr
               260                     265                     270
His Leu Glu Ser His Pro Pro Gly Pro Phe Glu Val Asn Ala Glu
               275                     280                     285
Gly Asn Leu Tyr Val Thr Arg Glu Leu Asp Arg Glu Ala Gln Ala
               290                     295                     300
Glu Tyr Leu Leu Gln Val Arg Ala Gln Asn Ser His Gly Glu Asp
               305                     310                     315
```

218

Tyr Ala Ala Pro Leu Glu Leu His Val Leu Val Met Asp Glu Asn
                320   325   330

Asp Asn Val Pro Ile Cys Pro Pro Arg Asp Pro Thr Val Ser Ile
                335   340   345

Pro Glu Leu Ser Pro Pro Gly Thr Glu Val Thr Arg Leu Ser Ala
                350   355   360

Glu Asp Ala Asp Ala Pro Gly Ser Pro Asn Ser His Val Val Tyr
                365   370   375

Gln Leu Leu Ser Pro Glu Pro Glu Asp Gly Val Glu Gly Arg Ala
                380   385   390

Phe Gln Val Asp Pro Thr Ser Gly Ser Val Thr Leu Gly Val Leu
                395   400   405

Pro Leu Arg Ala Gly Gln Asn Ile Leu Leu Leu Val Leu Ala Met
                410   415   420

Asp Leu Ala Gly Ala Glu Gly Gly Phe Ser Ser Thr Cys Glu Val
                425   430   435

Glu Val Ala Val Thr Asp Ile Asn Asp His Ala Pro Glu Phe Ile
                440   445   450

Thr Ser Gln Ile Gly Pro Ile Ser Leu Pro Glu Asp Val Glu Pro
                455   460   465

Gly Thr Leu Val Ala Met Leu Thr Ala Ile Asp Ala Asp Leu Glu
                470   475   480

Pro Ala Phe Arg Leu Met Asp Phe Ala Ile Glu Arg Gly Asp Thr
                485   490   495

Glu Gly Thr Phe Gly Leu Asp Trp Glu Pro Asp Ser Gly His Val
                500   505   510

Arg Leu Arg Leu Cys Lys Asn Leu Ser Tyr Glu Ala Ala Pro Ser
                515   520   525

His Glu Val Val Val Val Val Gln Ser Val Ala Lys Leu Val Gly
                530   535   540

Pro Gly Pro Gly Pro Gly Ala Thr Ala Thr Val Thr Val Leu Val
                545   550   555

Glu Arg Val Met Pro Pro Lys Leu Asp Gln Glu Ser Tyr Glu
                560   565   570

Ala Ser Val Pro Ile Ser Ala Pro Ala Gly Ser Phe Leu Leu Thr
                575   580   585

Ile Gln Pro Ser Asp Pro Ile Ser Arg Thr Leu Arg Phe Ser Leu
                590   595   600

Val Asn Asp Ser Glu Gly Trp Leu Cys Ile Glu Lys Phe Ser Gly

219

```
                    605                     610                     615
    Glu Val His Thr Ala Gln Ser Leu Gln Gly Ala Gln Pro Gly Asp
                    620                     625                     630

    Thr Tyr Thr Val Leu Val Glu Ala Gln Asp Thr Ala Leu Thr Leu
                    635                     640                     645

    Ala Pro Val Pro Ser Gln Tyr Leu Cys Thr Pro Arg Gln Asp His
                    650                     655                     660

    Gly Leu Ile Val Ser Gly Pro Ser Lys Asp Pro Asp Leu Ala Ser
                    665                     670                     675

    Gly His Gly Pro Tyr Ser Phe Thr Leu Gly Pro Asn Pro Thr Val
                    680                     685                     690

    Gln Arg Asp Trp Arg Leu Gln Thr Leu Asn Gly Ser His Ala Tyr
                    695                     700                     705

    Leu Thr Leu Ala Leu His Trp Val Glu Pro Arg Glu His Ile Ile
                    710                     715                     720

    Pro Val Val Val Ser His Asn Ala Gln Met Trp Gln Leu Leu Val
                    725                     730                     735

    Arg Val Ile Val Cys Arg Cys Asn Val Glu Gly Gln Cys Met Arg
                    740                     745                     750

    Lys Val Gly Arg Met Lys Gly Met Pro Thr Lys Leu Ser Ala Val
                    755                     760                     765

    Gly Ile Leu Val Gly Thr Leu Val Ala Ile Gly Ile Phe Leu Ile
                    770                     775                     780

    Leu Ile Phe Thr His Trp Thr Met Ser Arg Lys Lys Asp Pro Asp
                    785                     790                     795

    Gln Pro Ala Asp Ser Val Pro Leu Lys Ala Thr Val
                    800                     805
```

```
<210> 230
<211> 50
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 230
 cgccttaccg cgcagcccga agattcacta tggtgaaaat cgccttcaat 50

<210> 231
<211> 24
<212> DNA
<213> Artificial Seqeunce
```

<220>
<221> Artificial Sequence
<222> full
<223> Synthetic oligonucleotide probe

<400> 231
 cctgagctgt aaccccactc cagg 24

<210> 232
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 232
 agagtctgtc ccagctatct tgt 23

<210> 233
<211> 2786
<212> DNA
<213> Homo sapiens

<400> 233
 ccggggacat gaggtggata ctgttcattg gggcccttat tgggtccagc 50

 atctgtggcc aagaaaaatt ttttggggac caagttttga ggattaatgt 100

 cagaaatgga gacgagatca gcaaattgag tcaactagtg aattcaaaca 150

 acttgaagct caatttctgg aaatctccct cctccttcaa tcggcctgtg 200

 gatgtcctgg tcccatctgt cagtctgcag gcatttaaat ccttcctgag 250

 atcccagggc ttagagtacg cagtgacaat tgaggacctg caggcccttt 300

 tagacaatga agatgatgaa atgcaacaca atgaagggca agaacggagc 350

 agtaataact tcaactacgg ggcttaccat tccctggaag ctatttacca 400

 cgagatggac aacattgccg cagactttcc tgacctggcg aggagggtga 450

 agattggaca ttcgtttgaa aaccggccga tgtatgtact gaagttcagc 500

 actgggaaag gcgtgaggcg gccggccgtt tggctgaatg caggcatcca 550

 ttcccgagag tggatctccc aggccactgc aatctggacg gcaaggaaga 600

 ttgtatctga ttaccagagg gatccagcta tcacctccat cttggagaaa 650

 atggatattt tcttgttgcc tgtggccaat cctgatggat atgtgtatac 700

 tcaaactcaa aaccgattat ggaggaagac gcggtcccga atcctggaa 750

 gctcctgcat tggtgctgac ccaaatagaa actggaacgc tagttttgca 800

 ggaaagggag ccagcgacaa cccttgctcc gaagtgtacc atggacccca 850

221

```
cgccaattcg gaagtggagg tgaaatcagt ggtagatttc atccaaaaac 900

atgggaattt caagggcttc atcgacctgc acagctactc gcagctgctg 950

atgtatccat atgggtactc agtcaaaaag gccccagatg ccgaggaact 1000

cgacaaggtg gcgaggcttg cggccaaagc tctggcttct gtgtcgggca 1050

ctgagtacca agtgggtccc acctgcacca ctgtctatcc agctagcggg 1100

agcagcatcg actgggcgta tgacaacggc atcaaatttg cattcacatt 1150

tgagttgaga gataccggga cctatggctt cctcctgcca gctaaccaga 1200

tcatccccac tgcagaggag acgtggctgg ggctgaagac catcatggag 1250

catgtgcggg acaacctcta ctaggcgatg gctctgctct gtctacattt 1300

atttgtaccc acacgtgcac gcactgaggc cattgttaaa ggagctcttt 1350

cctacctgtg tgagtcagag ccctctgggt ttgtggagca cacaggcctg 1400

cccctctcca gccagctccc tggagtcgtg tgtcctggcg gtgtccctgc 1450

aagaactggt tctgccagcc tgctcaattt tggtcctgct gtttttgatg 1500

agccttttgt ctgtttctcc ttccaccctg ctggctgggc ggctgcactc 1550

agcatcaccc cttcctgggt ggcatgtctc tctctacctc atttttagaa 1600

ccaaagaaca tctgagatga ttctctaccc tcatccacat ctagccaagc 1650

cagtgacctt gctctggtgg cactgtggga gacaccactt gtctttaggt 1700

gggtctcaaa gatgatgtag aatttccttt aatttctcgc agtcttcctg 1750

gaaaatattt tcctttgagc agcaaatctt gtagggatat cagtgaaggt 1800

ctctccctcc ctcctctcct gtttttttttt tttttgagac agagttttgc 1850

tcttgttgcc caggctggag tgtgatggct cgatcttggc tcaccacaac 1900

ctctgcctcc tgggttcaag caattctcct gcctcagcct cttgagtagc 1950

ttggtttata ggcgcatgcc accatgcctg gctaattttg tgtttttagt 2000

agagacaggg tttctccatg ttggtcaggc tggtctcaaa ctcccaacct 2050

caggtgatct gccctccttg gcctcccaga gtgctgggat tacaggtgtg 2100

agccactgtg ccgggcccgt cccctccttt tttaggcctg aatacaaagt 2150

agaagatcac tttccttcac tgtgctgaga atttctagat actacagttc 2200

ttactcctct cttccctttg ttattcagtg tgaccaggat ggcgggaggg 2250

gatctgtgtc actgtaggta ctgtgcccag gaaggctggg tgaagtgacc 2300
```

222

```
atctaaattg caggatggtg aaattatccc catctgtcct aatgggctta 2350

cctcctcttt gccttttgaa ctcacttcaa agatctaggc ctcatcttac 2400

aggtcctaaa tcactcatct ggcctggata atctcactgc cctggcacat 2450

tcccatttgt gctgtggtgt atcctgtgtt tccttgtcct ggtttgtgtg 2500

tgtgtgtgtg tgtgtgtgtg tgtgtgtgtt tgtgtgtgtg tgtctgtcta 2550

ttttgtatcc tggaccacaa gttcctaagt agagcaagaa ttcatcaacc 2600

agctgcctct tgtttcattt cacctcagca cgtaccatct gtccttttgt 2650

tgttgttgtt ttgttttttgt ttttttgctt ttaccaaaca tgtctgtaaa 2700

tcttaacctc ctgcctagga tttgtacagc atctggtgtg tgcttataag 2750

ccaataaata ttcaatgtga aaaaaaaaa aaaaaa 2786
```

```
<210> 234
<211> 421
<212> PRT
<213> Homo sapiens

<400> 234
Met Arg Trp Ile Leu Phe Ile Gly Ala Leu Ile Gly Ser Ser Ile
1               5                   10                  15

Cys Gly Gln Glu Lys Phe Phe Gly Asp Gln Val Leu Arg Ile Asn
                20                  25                  30

Val Arg Asn Gly Asp Glu Ile Ser Lys Leu Ser Gln Leu Val Asn
                35                  40                  45

Ser Asn Asn Leu Lys Leu Asn Phe Trp Lys Ser Pro Ser Ser Phe
                50                  55                  60

Asn Arg Pro Val Asp Val Leu Val Pro Ser Val Ser Leu Gln Ala
                65                  70                  75

Phe Lys Ser Phe Leu Arg Ser Gln Gly Leu Glu Tyr Ala Val Thr
                80                  85                  90

Ile Glu Asp Leu Gln Ala Leu Leu Asp Asn Glu Asp Asp Glu Met
                95                  100                 105

Gln His Asn Glu Gly Gln Glu Arg Ser Ser Asn Asn Phe Asn Tyr
                110                 115                 120

Gly Ala Tyr His Ser Leu Glu Ala Ile Tyr His Glu Met Asp Asn
                125                 130                 135

Ile Ala Ala Asp Phe Pro Asp Leu Ala Arg Arg Val Lys Ile Gly
                140                 145                 150

His Ser Phe Glu Asn Arg Pro Met Tyr Val Leu Lys Phe Ser Thr
                155                 160                 165
```

223

```
Gly Lys Gly Val Arg Arg Pro Ala Val Trp Leu Asn Ala Gly Ile
                170             175             180

His Ser Arg Glu Trp Ile Ser Gln Ala Thr Ala Ile Trp Thr Ala
                185             190             195

Arg Lys Ile Val Ser Asp Tyr Gln Arg Asp Pro Ala Ile Thr Ser
                200             205             210

Ile Leu Glu Lys Met Asp Ile Phe Leu Leu Pro Val Ala Asn Pro
                215             220             225

Asp Gly Tyr Val Tyr Thr Gln Thr Gln Asn Arg Leu Trp Arg Lys
                230             235             240

Thr Arg Ser Arg Asn Pro Gly Ser Ser Cys Ile Gly Ala Asp Pro
                245             250             255

Asn Arg Asn Trp Asn Ala Ser Phe Ala Gly Lys Gly Ala Ser Asp
                260             265             270

Asn Pro Cys Ser Glu Val Tyr His Gly Pro His Ala Asn Ser Glu
                275             280             285

Val Glu Val Lys Ser Val Val Asp Phe Ile Gln Lys His Gly Asn
                290             295             300

Phe Lys Gly Phe Ile Asp Leu His Ser Tyr Ser Gln Leu Leu Met
                305             310             315

Tyr Pro Tyr Gly Tyr Ser Val Lys Lys Ala Pro Asp Ala Glu Glu
                320             325             330

Leu Asp Lys Val Ala Arg Leu Ala Ala Lys Ala Leu Ala Ser Val
                335             340             345

Ser Gly Thr Glu Tyr Gln Val Gly Pro Thr Cys Thr Thr Val Tyr
                350             355             360

Pro Ala Ser Gly Ser Ser Ile Asp Trp Ala Tyr Asp Asn Gly Ile
                365             370             375

Lys Phe Ala Phe Thr Phe Glu Leu Arg Asp Thr Gly Thr Tyr Gly
                380             385             390

Phe Leu Leu Pro Ala Asn Gln Ile Ile Pro Thr Ala Glu Glu Thr
                395             400             405

Trp Leu Gly Leu Lys Thr Ile Met Glu His Val Arg Asp Asn Leu
                410             415             420

Tyr
```

<400> 235
 caaccatgca aggacagggc aggagaagag gaacctgcaa agacatattt 50

 tgttccaaaa tggcatctta cctttatgga gtactctttg ctgttggcct 100

 ctgtgctcca atctactgtg tgtccccggc caatgccccc agtgcatacc 150

 cccgcccttc ctccacaaag agcacccctg cctcacaggt gtattccctc 200

 aacaccgact ttgccttccg cctataccgc aggctggttt tggagacccc 250

 gagtcagaac atcttcttct cccctgtgag tgtctccact tccctggcca 300

 tgctctccct tggggcccac tcagtcacca agacccagat tctccagggc 350

 ctgggcttca acctcacaca cacaccagag tctgccatcc accagggctt 400

 ccagcacctg gttcactcac tgactgttcc cagcaaagac ctgaccttga 450

 agatgggaag tgccctcttc gtcaagaagg agctgcagct gcaggcaaat 500

 ttcttgggca atgtcaagag gctgtatgaa gcagaagtct tttctacaga 550

 tttctccaac ccctccattg cccaggcgag gatcaacagc catgtgaaaa 600

 agaagaccca agggaaggtt gtagacataa tccaaggcct tgaccttctg 650

 acggccatgg ttctggtgaa tcacattttc tttaaagcca agtgggagaa 700

 gcccttcac cttgaatata caagaaagaa cttcccattc ctggtgggcg 750

 agcaggtcac tgtgcaagtc cccatgatgc accagaaaga gcagttcgct 800

 tttgggggtgg atacagagct gaactgcttt gtgctgcaga tggattacaa 850

 gggagatgcc gtggccttct ttgtcctccc tagcaagggc aagatgaggc 900

 aactggaaca ggccttgtca gccagaacac tgataaagtg gagccactca 950

 ctccagaaaa ggtggataga ggtgttcatc cccagatttt ccatttctgc 1000

 ctcctacaat ctggaaacca tcctcccgaa gatgggcatc caaaatgcct 1050

 ttgacaaaaa tgctgatttt tctggaattg caaagagaga ctccctgcag 1100

 gtttctaaag caacccacaa ggctgtgctg gatgtcagtg aagagggcac 1150

 tgaggccaca gcagctacca ccaccaagtt catagtccga tcgaaggatg 1200

 gtccctctta cttcactgtc tccttcaata ggaccttcct gatgatgatt 1250

 acaaataaag ccacagacgg tattctcttt ctagggaaag tggaaaatcc 1300

 cactaaatcc taggtgggaa atggcctgtt aactgatggc acattgctaa 1350

 tgcacaagaa ataacaaacc acatccctct ttctgttctg agggtgcatt 1400

 tgaccccagt ggagctggat tcgctggcag ggatgccact tccaaggctc 1450

```
         aatcaccaaa ccatcaacag ggaccccagt cacaagccaa cacccattaa 1500

         ccccagtcag tgcccttttc cacaaattct cccaggtaac tagcttcatg 1550

         ggatgttgct gggttaccat atttccattc cttggggctc ccaggaatgg 1600

         aaatacgcca acccaggtta ggcacctcta ttgcagaatt acaataacac 1650

         attcaataaa actaaaatat gaattcaaaa aaaaaaaaaa aaaaaaaaaa 1700

         aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 1743
```

<210> 236
<211> 417
<212> PRT
<213> Homo sapiens

<400> 236

```
Met Ala Ser Tyr Leu Tyr Gly Val Leu Phe Ala Val Gly Leu Cys
1               5                   10                  15

Ala Pro Ile Tyr Cys Val Ser Pro Ala Asn Ala Pro Ser Ala Tyr
                20                  25                  30

Pro Arg Pro Ser Ser Thr Lys Ser Thr Pro Ala Ser Gln Val Tyr
                35                  40                  45

Ser Leu Asn Thr Asp Phe Ala Phe Arg Leu Tyr Arg Arg Leu Val
                50                  55                  60

Leu Glu Thr Pro Ser Gln Asn Ile Phe Phe Ser Pro Val Ser Val
                65                  70                  75

Ser Thr Ser Leu Ala Met Leu Ser Leu Gly Ala His Ser Val Thr
                80                  85                  90

Lys Thr Gln Ile Leu Gln Gly Leu Gly Phe Asn Leu Thr His Thr
                95                  100                 105

Pro Glu Ser Ala Ile His Gln Gly Phe Gln His Leu Val His Ser
                110                 115                 120

Leu Thr Val Pro Ser Lys Asp Leu Thr Leu Lys Met Gly Ser Ala
                125                 130                 135

Leu Phe Val Lys Lys Glu Leu Gln Leu Gln Ala Asn Phe Leu Gly
                140                 145                 150

Asn Val Lys Arg Leu Tyr Glu Ala Glu Val Phe Ser Thr Asp Phe
                155                 160                 165

Ser Asn Pro Ser Ile Ala Gln Ala Arg Ile Asn Ser His Val Lys
                170                 175                 180

Lys Lys Thr Gln Gly Lys Val Val Asp Ile Ile Gln Gly Leu Asp
                185                 190                 195

Leu Leu Thr Ala Met Val Leu Val Asn His Ile Phe Phe Lys Ala
```

```
Lys Trp Glu Lys Pro Phe His Leu Glu Tyr Thr Arg Lys Asn Phe
            215             220             225

Pro Phe Leu Val Gly Glu Gln Val Thr Val Gln Val Pro Met Met
            230             235             240

His Gln Lys Glu Gln Phe Ala Phe Gly Val Asp Thr Glu Leu Asn
            245             250             255

Cys Phe Val Leu Gln Met Asp Tyr Lys Gly Asp Ala Val Ala Phe
            260             265             270

Phe Val Leu Pro Ser Lys Gly Lys Met Arg Gln Leu Glu Gln Ala
            275             280             285

Leu Ser Ala Arg Thr Leu Ile Lys Trp Ser His Ser Leu Gln Lys
            290             295             300

Arg Trp Ile Glu Val Phe Ile Pro Arg Phe Ser Ile Ser Ala Ser
            305             310             315

Tyr Asn Leu Glu Thr Ile Leu Pro Lys Met Gly Ile Gln Asn Ala
            320             325             330

Phe Asp Lys Asn Ala Asp Phe Ser Gly Ile Ala Lys Arg Asp Ser
            335             340             345

Leu Gln Val Ser Lys Ala Thr His Lys Ala Val Leu Asp Val Ser
            350             355             360

Glu Glu Gly Thr Glu Ala Thr Ala Ala Thr Thr Thr Lys Phe Ile
            365             370             375

Val Arg Ser Lys Asp Gly Pro Ser Tyr Phe Thr Val Ser Phe Asn
            380             385             390

Arg Thr Phe Leu Met Met Ile Thr Asn Lys Ala Thr Asp Gly Ile
            395             400             405

Leu Phe Leu Gly Lys Val Glu Asn Pro Thr Lys Ser
            410             415
```

<210> 237
<211> 23
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-23
<223> Synthetic construct.

<400> 237
 caaccatgca aggacagggc agg 23

<210> 238

```
<211> 47
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-47
<223> Synthetic construct.

<400> 238
 ctttgctgtt ggcctctgtg ctcccaacca tgcaaggaca gggcagg 47

<210> 239
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 239
 tgactcgggg tctccaaaac cagc 24

<210> 240
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 240
 ggtataggcg gaaggcaaag tcgg 24

<210> 241
<211> 48
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-48
<223> Synthetic construct.

<400> 241
 ggcatcttac ctttatggag tactctttgc tgttggcctc tgtgctcc 48

<210> 242
<211> 2436
<212> DNA
<213> Homo sapiens

<400> 242
 ggctgaccgt gctacattgc ctggaggaag cctaaggaac ccaggcatcc 50
```

228

```
agctgcccac gcctgagtcc aagattcttc ccaggaacac aaacgtagga 100

gacccacgct cctggaagca ccagccttta tctcttcacc ttcaagtccc 150

ctttctcaag aatcctctgt tctttgccct ctaaagtctt ggtacatcta 200

ggacccaggc atcttgcttt ccagccacaa agagacagat gaagatgcag 250

aaaggaaatg ttctccttat gtttggtcta ctattgcatt tagaagctgc 300

aacaaattcc aatgagacta gcacctctgc caacactgga tccagtgtga 350

tctccagtgg agccagcaca gccaccaact ctgggtccag tgtgacctcc 400

agtggggtca gcacagccac catctcaggg tccagcgtga cctccaatgg 450

ggtcagcata gtcaccaact ctgagttcca tacaacctcc agtgggatca 500

gcacagccac caactctgag ttcagcacag cgtccagtgg gatcagcata 550

gccaccaact ctgagtccag cacaacctcc agtggggcca gcacagccac 600

caactctgag tccagcacac cctccagtgg ggccagcaca gtcaccaact 650

ctgggtccag tgtgacctcc agtggagcca gcactgccac caactctgag 700

tccagcacag tgtccagtag ggccagcact gccaccaact ctgagtctag 750

cacactctcc agtggggcca gcacagccac caactctgac tccagcacaa 800

cctccagtgg ggctagcaca gccaccaact ctgagtccag cacaacctcc 850

agtggggcca gcacagccac caactctgag tccagcacag tgtccagtag 900

ggccagcact gccaccaact ctgagtccag cacaacctcc agtggggcca 950

gcacagccac caactctgag tccagaacga cctccaatgg ggctggcaca 1000

gccaccaact ctgagtccag cacgacctcc agtggggcca gcacagccac 1050

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tccagcacga cctccagtgg ggctagcaca gccaccaact ctgactccag 1200

cacaacctcc agtggggccg gcacagccac caactctgag tccagcacag 1250

tgtccagtgg gatcagcaca gtcaccaatt ctgagtccag cacaccctcc 1300

agtggggcca acacagccac caactctgag tccagtacga cctccagtgg 1350

ggccaacaca gccaccaact ctgagtccag cacagtgtcc agtggggcca 1400

gcactgccac caactctgag tccagcacaa cctccagtgg ggtcagcaca 1450

gccaccaact ctgagtccag cacaacctcc agtggggcta gcacagccac 1500
```

229

```
caactctgac tccagcacaa cctccagtga ggccagcaca gccaccaact 1550

ctgagtctag cacagtgtcc agtgggatca gcacagtcac caattctgag 1600

tccagcacaa cctccagtgg ggccaacaca gccaccaact ctgggtccag 1650

tgtgacctct gcaggctctg aacagcagc tctgactgga atgcacacaa 1700

cttcccatag tgcatctact gcagtgagtg aggcaaagcc tggtgggtcc 1750

ctggtgccgt gggaaatctt cctcatcacc ctggtctcgg ttgtggcggc 1800

cgtggggctc tttgctgggc tcttcttctg tgtgagaaac agcctgtccc 1850

tgagaaacac ctttaacaca gctgtctacc accctcatgg cctcaaccat 1900

ggccttggtc caggccctgg agggaatcat ggagcccccc acaggcccag 1950

gtggagtcct aactggttct ggaggagacc agtatcatcg atagccatgg 2000

agatgagcgg gaggaacagc gggccctgag cagccccgga agcaagtgcc 2050

gcattcttca ggaaggaaga gacctgggca cccaagacct ggtttccttt 2100

cattcatccc aggagacccc tcccagcttt gtttgagatc ctgaaaatct 2150

tgaagaaggt attcctcacc tttcttgcct ttaccagaca ctggaaagag 2200

aatactatat tgctcattta gctaagaaat aaatacatct catctaacac 2250

acacgacaaa gagaagctgt gcttgccccg gggtgggtat ctagctctga 2300

gatgaactca gttataggag aaaacctcca tgctggactc catctggcat 2350

tcaaaatctc cacagtaaaa tccaaagacc tcaaaaaaaa aaaaaaaaa 2400

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 2436
```

<210> 243
<211> 596
<212> PRT
<213> Homo sapiens

<400> 243

```
Met Lys Met Gln Lys Gly Asn Val Leu Leu Met Phe Gly Leu Leu
 1               5                  10                  15

Leu His Leu Glu Ala Ala Thr Asn Ser Asn Glu Thr Ser Thr Ser
                20                  25                  30

Ala Asn Thr Gly Ser Ser Val Ile Ser Ser Gly Ala Ser Thr Ala
                35                  40                  45

Thr Asn Ser Gly Ser Ser Val Thr Ser Ser Gly Val Ser Thr Ala
                50                  55                  60

Thr Ile Ser Gly Ser Ser Val Thr Ser Asn Gly Val Ser Ile Val
                65                  70                  75
```

230

```
Thr Asn Ser Glu Phe His Thr Thr Ser Ser Gly Ile Ser Thr Ala
                80                  85                      90

Thr Asn Ser Glu Phe Ser Thr Ala Ser Ser Gly Ile Ser Ile Ala
                95                 100                     105

Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala
               110           .     115                     120

Thr Asn Ser Glu Ser Ser Thr Pro Ser Ser Gly Ala Ser Thr Val
               125                 130                     135

Thr Asn Ser Gly Ser Ser Val Thr Ser Ser Gly Ala Ser Thr Ala
               140                 145                     150

Thr Asn Ser Glu Ser Ser Thr Val Ser Ser Arg Ala Ser Thr Ala
               155                 160                     165

Thr Asn Ser Glu Ser Ser Thr Leu Ser Ser Gly Ala Ser Thr Ala
               170                 175                     180

Thr Asn Ser Asp Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala
               185                 190                     195

Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala
               200                 205                     210

Thr Asn Ser Glu Ser Ser Thr Val Ser Ser Arg Ala Ser Thr Ala
               215                 220                     225

Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala
               230                 235                     240

Thr Asn Ser Glu Ser Arg Thr Thr Ser Asn Gly Ala Gly Thr Ala
               245                 250                     255

Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala
               260                 265                     270

Thr Asn Ser Asp Ser Ser Thr Val Ser Ser Gly Ala Ser Thr Ala
               275                 280                     285

Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala
               290                 295                     300

Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala
               305                 310                     315

Thr Asn Ser Asp Ser Ser Thr Thr Ser Ser Gly Ala Gly Thr Ala
               320                 325                     330

Thr Asn Ser Glu Ser Ser Thr Val Ser Ser Gly Ile Ser Thr Val
               335                 340                     345

Thr Asn Ser Glu Ser Ser Thr Pro Ser Ser Gly Ala Asn Thr Ala
               350                 355                     360

Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Asn Thr Ala
```

```
                 365                      370                      375
Thr Asn Ser Glu Ser Ser Thr Val Ser Ser Gly Ala Ser Thr Ala
                 380                      385                      390
Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Val Ser Thr Ala
                 395                      400                      405
Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala
                 410                      415                      420
Thr Asn Ser Asp Ser Ser Thr Thr Ser Ser Glu Ala Ser Thr Ala
                 425                      430                      435
Thr Asn Ser Glu Ser Ser Thr Val Ser Ser Gly Ile Ser Thr Val
                 440                      445                      450
Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Asn Thr Ala
                 455                      460                      465
Thr Asn Ser Gly Ser Ser Val Thr Ser Ala Gly Ser Gly Thr Ala
                 470                      475                      480
Ala Leu Thr Gly Met His Thr Thr Ser His Ser Ala Ser Thr Ala
                 485                      490                      495
Val Ser Glu Ala Lys Pro Gly Gly Ser Leu Val Pro Trp Glu Ile
                 500                      505                      510
Phe Leu Ile Thr Leu Val Ser Val Val Ala Ala Val Gly Leu Phe
                 515                      520                      525
Ala Gly Leu Phe Phe Cys Val Arg Asn Ser Leu Ser Leu Arg Asn
                 530                      535                      540
Thr Phe Asn Thr Ala Val Tyr His Pro His Gly Leu Asn His Gly
                 545                      550                      555
Leu Gly Pro Gly Pro Gly Gly Asn His Gly Ala Pro His Arg Pro
                 560                      565                      570
Arg Trp Ser Pro Asn Trp Phe Trp Arg Arg Pro Val Ser Ser Ile
                 575                      580                      585
Ala Met Glu Met Ser Gly Arg Asn Ser Gly Pro
                 590                      595
```

<210> 244
<211> 26
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-26
<223> Synthetic construct.

<400> 244

232

```
      gaagcaccag cctttatctc ttcacc 26

<210> 245
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic sequence.

<400> 245
 gtcagagttg gtggctgtgc tagc 24

<210> 246
<211> 48
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-48
<223> Synthetic construct.

<400> 246
 ggacccaggc atcttgcttt ccagccacaa agagacagat gaagatgc 48

<210> 247
<211> 957
<212> DNA
<213> Homo sapiens

<400> 247
 gggagagagg ataaatagca gcgtggcttc cctggctcct ctctgcatcc 50

 ttcccgacct tcccagcaat atgcatcttg cacgtctggt cggctcctgc 100

 tccctccttc tgctactggg ggccctgtct ggatgggcgg ccagcgatga 150

 ccccattgag aaggtcattg aagggatcaa ccgagggctg agcaatgcag 200

 agagagaggt gggcaaggcc ctggatggca tcaacagtgg aatcacgcat 250

 gccggaaggg aagtggagaa ggttttcaac ggacttagca acatggggag 300

 ccacaccggc aaggagttgg acaaaggcgt ccaggggctc aaccacggca 350

 tggacaaggt tgcccatgag atcaaccatg gtattggaca agcaggaaag 400

 gaagcagaga agcttggcca tggggtcaac aacgctgctg acaggccgg 450

 gaaggaagca gacaaagcgg tccaagggtt ccacactggg gtccaccagg 500

 ctgggaagga agcagagaaa cttggccaag gggtcaacca tgctgctgac 550

 caggctggaa aggaagtgga gaagcttggc caaggtgccc accatgctgc 600
```

233

tggccaggcc gggaaggagc tgcagaatgc tcataatggg gtcaaccaag 650

ccagcaagga ggccaaccag ctgctgaatg caaccatca aagcggatct 700

tccagccatc aaggaggggc cacaaccacg ccgttagcct ctggggcctc 750

agtcaacacg cctttcatca accttcccgc cctgtggagg agcgtcgcca 800

acatcatgcc ctaaactggc atccggcctt gctgggagaa taatgtcgcc 850

gttgtcacat cagctgacat gacctggagg ggttgggggt ggggggacagg 900

tttctgaaat ccctgaaggg ggttgtactg ggatttgtga ataaacttga 950

tacacca 957

<210> 248
<211> 247
<212> PRT
<213> Homo sapiens

<400> 248

```
Met His Leu Ala Arg Leu Val Gly Ser Cys Ser Leu Leu Leu Leu
 1               5                  10                  15

Leu Gly Ala Leu Ser Gly Trp Ala Ala Ser Asp Asp Pro Ile Glu
                20                  25                  30

Lys Val Ile Glu Gly Ile Asn Arg Gly Leu Ser Asn Ala Glu Arg
                    35                  40                  45

Glu Val Gly Lys Ala Leu Asp Gly Ile Asn Ser Gly Ile Thr His
                    50                  55                  60

Ala Gly Arg Glu Val Glu Lys Val Phe Asn Gly Leu Ser Asn Met
                65                  70                  75

Gly Ser His Thr Gly Lys Glu Leu Asp Lys Gly Val Gln Gly Leu
                80                  85                  90

Asn His Gly Met Asp Lys Val Ala His Glu Ile Asn His Gly Ile
                95                  100                 105

Gly Gln Ala Gly Lys Glu Ala Glu Lys Leu Gly His Gly Val Asn
                110                 115                 120

Asn Ala Ala Gly Gln Ala Gly Lys Glu Ala Asp Lys Ala Val Gln
                125                 130                 135

Gly Phe His Thr Gly Val His Gln Ala Gly Lys Glu Ala Glu Lys
                140                 145                 150

Leu Gly Gln Gly Val Asn His Ala Ala Asp Gln Ala Gly Lys Glu
                155                 160                 165

Val Glu Lys Leu Gly Gln Gly Ala His His Ala Ala Gly Gln Ala
                170                 175                 180
```

```
Gly Lys Glu Leu Gln Asn Ala His Asn Gly Val Asn Gln Ala Ser
                185                 190                 195

Lys Glu Ala Asn Gln Leu Leu Asn Gly Asn His Gln Ser Gly Ser
                200                 205                 210

Ser Ser His Gln Gly Gly Ala Thr Thr Thr Pro Leu Ala Ser Gly
                215                 220                 225

Ala Ser Val Asn Thr Pro Phe Ile Asn Leu Pro Ala Leu Trp Arg
                230                 235                 240

Ser Val Ala Asn Ile Met Pro
                245
```

<210> 249
<211> 23
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-23
<223> Synthetic construct.

<400> 249
 caatatgcat cttgcacgtc tgg 23

<210> 250
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 250
 aagcttctct gcttcctttc ctgc 24

<210> 251
<211> 43
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-43
<223> Synthetic construct.

<400> 251
 tgaccccatt gagaaggtca ttgaagggat caaccgaggg ctg 43

<210> 252
<211> 3781
<212> DNA
<213> Homo sapiens

<400> 252
```
ctccgggtcc ccaggggctg cgccgggccg gcctggcaag ggggacgagt 50

cagtggacac tccaggaaga gcggccccgc ggggggcgat gaccgtgcgc 100

tgaccctgac tcactccagg tccggaggcg ggggcccccg gggcgactcg 150

ggggcggacc gcggggcgga gctgccgccc gtgagtccgg ccgagccacc 200

tgagcccgag ccgcgggaca ccgtcgctcc tgctctccga atgctgcgca 250

ccgcgatggg cctgaggagc tggctcgccg ccccatgggg cgcgctgccg 300

cctcggccac cgctgctgct gctcctgctg ctgctgctcc tgctgcagcc 350

gccgcctccg acctgggcgc tcagcccccg gatcagcctg cctctgggct 400

ctgaagagcg gccattcctc agattcgaag ctgaacacat ctccaactac 450

acagcccttc tgctgagcag ggatggcagg accctgtacg tgggtgctcg 500

agaggccctc tttgcactca gtagcaacct cagcttcctg ccaggcgggg 550

agtaccagga gctgctttgg ggtgcagacg cagagaagaa acagcagtgc 600

agcttcaagg gcaaggaccc acagcgcgac tgtcaaaact acatcaagat 650

cctcctgccg ctcagcggca gtcacctgtt cacctgtggc acagcagcct 700

tcagccccat gtgtacctac atcaacatgg agaacttcac cctggcaagg 750

gacgagaagg ggaatgtcct cctggaagat ggcaagggcc gttgtccctt 800

cgacccgaat ttcaagtcca ctgccctggt ggttgatggc gagctctaca 850

ctggaacagt cagcagcttc caagggaatg acccggccat ctcgcggagc 900

caaagccttc gccccaccaa gaccgagagc tccctcaact ggctgcaaga 950

cccagctttt gtggcctcag cctacattcc tgagagcctg ggcagcttgc 1000

aaggcgatga tgacaagatc tactttttct tcagcgagac tggccaggaa 1050

tttgagttct ttgagaacac cattgtgtcc cgcattgccc gcatctgcaa 1100

gggcgatgag ggtggagagc gggtgctaca gcagcgctgg acctccttcc 1150

tcaaggccca gctgctgtgc tcacggcccg acgatggctt ccccttcaac 1200

gtgctgcagg atgtcttcac gctgagcccc agcccccagg actggcgtga 1250

cacccttttc tatggggtct tcacttccca gtggcacagg ggaactacag 1300

aaggctctgc cgtctgtgtc ttcacaatga aggatgtgca gagagtcttc 1350

agcggcctct acaaggaggt gaaccgtgag acacagcagt ggtacaccgt 1400

gacccacccg gtgcccacac cccggcctgg agcgtgcatc accaacagtg 1450
```

236

```
cccgggaaag gaagatcaac tcatccctgc agctcccaga ccgcgtgctg 1500

aacttcctca aggaccactt cctgatggac gggcaggtcc gaagccgcat 1550

gctgctgctg cagccccagg ctcgctacca gcgcgtggct gtacaccgcg 1600

tccctggcct gcaccacacc tacgatgtcc tcttcctggg cactggtgac 1650

ggccggctcc acaaggcagt gagcgtgggc ccccgggtgc acatcattga 1700

ggagctgcag atcttctcat cgggacagcc cgtgcagaat ctgctcctgg 1750

acacccacag ggggctgctg tatgcggcct cacactcggg cgtagtccag 1800

gtgcccatgg ccaactgcag cctgtaccgg agctgtgggg actgcctcct 1850

cgcccgggac ccctactgtg cttggagcgg ctccagctgc aagcacgtca 1900

gcctctacca gcctcagctg gccaccaggc cgtggatcca ggacatcgag 1950

ggagccagcg ccaaggacct ttgcagcgcg tcttcggttg tgtccccgtc 2000

ttttgtacca acaggggaga agccatgtga gcaagtccag ttccagccca 2050

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tccagtgctg gtcactagag gagggcttcc agcagctggt agccagctac 2250

tgcccagagg tggtggagga cggggtggca gaccaaacag atgagggtgg 2300

cagtgtaccc gtcattatca gcacatcgcg tgtgagtgca ccagctggtg 2350

gcaaggccag ctggggtgca gacaggtcct actggaagga gttcctggtg 2400

atgtgcacgc tctttgtgct ggccgtgctg ctcccagttt tattcttgct 2450

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ccagcgtgca ccccaagacc tgccctgtgg tgctgcccccc tgagacccgc 2550

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agaagaggcc actcagcatc caagacagct tcgtggaggt atccccagtg 2700

tgcccccggc cccgggtccg ccttggctcg agatccgtg actctgtggt 2750

gtgagagctg acttccagag gacgctgccc tggcttcagg ggctgtgaat 2800

gctcggagag ggtcaactgg acctcccctc cgctctgctc ttcgtggaac 2850

acgaccgtgg tgcccggccc ttgggagcct tggagccagc tggcctgctg 2900
```

```
ctctccagtc aagtagcgaa gctcctacca cccagacacc caaacagccg 2950

tggccccaga ggtcctggcc aaatatgggg gcctgcctag gttggtggaa 3000

cagtgctcct tatgtaaact gagccctttg tttaaaaaac aattccaaat 3050

gtgaaactag aatgagaggg aagagatagc atggcatgca gcacacacgg 3100

ctgctccagt tcatggcctc ccagggggtgc tggggatgca tccaaagtgg 3150

ttgtctgaga cagagttgga aaccctcacc aactggcctc ttccacttcc 3200

acattatccc gctgccaccg gctgccctgt ctcactgcag attcaggacc 3250

agcttgggct gcgtgcgttc tgccttgcca gtcagccgag gatgtagttg 3300

ttgctgccgt cgtcccacca cctcagggac cagagggcta ggttggcact 3350

gcggccctca ccaggtcctg ggctcggacc caactcctgg acctttccag 3400

cctgtatcag gctgtggcca cacgagagga cagcgcgagc tcaggagaga 3450

tttcgtgaca atgtacgcct ttccctcaga attcagggaa gagactgtcg 3500

cctgccttcc tccgttgttg cgtgagaacc cgtgtgcccc ttcccaccat 3550

atccaccctc gctccatctt tgaactcaaa cacgaggaac taactgcacc 3600

ctggtcctct ccccagtccc cagttcaccc tccatccctc accttcctcc 3650

actctaaggg atatcaacac tgcccagcac aggggccctg aatttatgtg 3700

gttttttatac attttttaat aagatgcact ttatgtcatt ttttaataaa 3750

gtctgaagaa ttactgttta aaaaaaaaaa a 3781
```

<210> 253
<211> 837
<212> PRT
<213> Homo sapiens

<400> 253

```
Met Leu Arg Thr Ala Met Gly Leu Arg Ser Trp Leu Ala Ala Pro
 1               5                  10                  15

Trp Gly Ala Leu Pro Pro Arg Pro Pro Leu Leu Leu Leu Leu Leu
                 20                  25                  30

Leu Leu Leu Leu Leu Gln Pro Pro Pro Thr Trp Ala Leu Ser
                 35                  40                  45

Pro Arg Ile Ser Leu Pro Leu Gly Ser Glu Glu Arg Pro Phe Leu
                 50                  55                  60

Arg Phe Glu Ala Glu His Ile Ser Asn Tyr Thr Ala Leu Leu Leu
                 65                  70                  75

Ser Arg Asp Gly Arg Thr Leu Tyr Val Gly Ala Arg Glu Ala Leu
```

238

```
                    80                    85                    90
Phe Ala Leu Ser Ser Asn Leu Ser Phe Leu Pro Gly Gly Glu Tyr
                95                  100                  105
Gln Glu Leu Leu Trp Gly Ala Asp Ala Glu Lys Lys Gln Gln Cys
                110                 115                  120
Ser Phe Lys Gly Lys Asp Pro Gln Arg Asp Cys Gln Asn Tyr Ile
                125                 130                  135
Lys Ile Leu Leu Pro Leu Ser Gly Ser His Leu Phe Thr Cys Gly
                140                 145                  150
Thr Ala Ala Phe Ser Pro Met Cys Thr Tyr Ile Asn Met Glu Asn
                155                 160                  165
Phe Thr Leu Ala Arg Asp Glu Lys Gly Asn Val Leu Leu Glu Asp
                170                 175                  180
Gly Lys Gly Arg Cys Pro Phe Asp Pro Asn Phe Lys Ser Thr Ala
                185                 190                  195
Leu Val Val Asp Gly Glu Leu Tyr Thr Gly Thr Val Ser Ser Phe
                200                 205                  210
Gln Gly Asn Asp Pro Ala Ile Ser Arg Ser Gln Ser Leu Arg Pro
                215                 220                  225
Thr Lys Thr Glu Ser Ser Leu Asn Trp Leu Gln Asp Pro Ala Phe
                230                 235                  240
Val Ala Ser Ala Tyr Ile Pro Glu Ser Leu Gly Ser Leu Gln Gly
                245                 250                  255
Asp Asp Asp Lys Ile Tyr Phe Phe Phe Ser Glu Thr Gly Gln Glu
                260                 265                  270
Phe Glu Phe Phe Glu Asn Thr Ile Val Ser Arg Ile Ala Arg Ile
                275                 280                  285
Cys Lys Gly Asp Glu Gly Gly Glu Arg Val Leu Gln Gln Arg Trp
                290                 295                  300
Thr Ser Phe Leu Lys Ala Gln Leu Leu Cys Ser Arg Pro Asp Asp
                305                 310                  315
Gly Phe Pro Phe Asn Val Leu Gln Asp Val Phe Thr Leu Ser Pro
                320                 325                  330
Ser Pro Gln Asp Trp Arg Asp Thr Leu Phe Tyr Gly Val Phe Thr
                335                 340                  345
Ser Gln Trp His Arg Gly Thr Thr Glu Gly Ser Ala Val Cys Val
                350                 355                  360
Phe Thr Met Lys Asp Val Gln Arg Val Phe Ser Gly Leu Tyr Lys
                365                 370                  375

                              239
```

```
Glu Val Asn Arg Glu Thr Gln Gln Trp Tyr Thr Val Thr His Pro
            380                 385                     390

Val Pro Thr Pro Arg Pro Gly Ala Cys Ile Thr Asn Ser Ala Arg
            395                 400                     405

Glu Arg Lys Ile Asn Ser Ser Leu Gln Leu Pro Asp Arg Val Leu
            410                 415                     420

Asn Phe Leu Lys Asp His Phe Leu Met Asp Gly Gln Val Arg Ser
            425                 430                     435

Arg Met Leu Leu Leu Gln Pro Gln Ala Arg Tyr Gln Arg Val Ala
            440                 445                     450

Val His Arg Val Pro Gly Leu His His Thr Tyr Asp Val Leu Phe
            455                 460                     465

Leu Gly Thr Gly Asp Gly Arg Leu His Lys Ala Val Ser Val Gly
            470                 475                     480

Pro Arg Val His Ile Ile Glu Glu Leu Gln Ile Phe Ser Ser Gly
            485                 490                     495

Gln Pro Val Gln Asn Leu Leu Leu Asp Thr His Arg Gly Leu Leu
            500                 505                     510

Tyr Ala Ala Ser His Ser Gly Val Val Gln Val Pro Met Ala Asn
            515                 520                     525

Cys Ser Leu Tyr Arg Ser Cys Gly Asp Cys Leu Leu Ala Arg Asp
            530                 535                     540

Pro Tyr Cys Ala Trp Ser Gly Ser Ser Cys Lys His Val Ser Leu
            545                 550                     555

Tyr Gln Pro Gln Leu Ala Thr Arg Pro Trp Ile Gln Asp Ile Glu
            560                 565                     570

Gly Ala Ser Ala Lys Asp Leu Cys Ser Ala Ser Ser Val Val Ser
            575                 580                     585

Pro Ser Phe Val Pro Thr Gly Glu Lys Pro Cys Glu Gln Val Gln
            590                 595                     600

Phe Gln Pro Asn Thr Val Asn Thr Leu Ala Cys Pro Leu Leu Ser
            605                 610                     615

Asn Leu Ala Thr Arg Leu Trp Leu Arg Asn Gly Ala Pro Val Asn
            620                 625                     630

Ala Ser Ala Ser Cys His Val Leu Pro Thr Gly Asp Leu Leu Leu
            635                 640                     645

Val Gly Thr Gln Gln Leu Gly Glu Phe Gln Cys Trp Ser Leu Glu
            650                 655                     660

Glu Gly Phe Gln Gln Leu Val Ala Ser Tyr Cys Pro Glu Val Val
```

240

```
            665                    670                   675

Glu Asp Gly Val Ala Asp Gln Thr Asp Glu Gly Gly Ser Val Pro
            680                    685                   690
Val Ile Ile Ser Thr Ser Arg Val Ser Ala Pro Ala Gly Gly Lys
            695                    700                   705
Ala Ser Trp Gly Ala Asp Arg Ser Tyr Trp Lys Glu Phe Leu Val
            710                    715                   720
Met Cys Thr Leu Phe Val Leu Ala Val Leu Leu Pro Val Leu Phe
            725                    730                   735
Leu Leu Tyr Arg His Arg Asn Ser Met Lys Val Phe Leu Lys Gln
            740                    745                   750
Gly Glu Cys Ala Ser Val His Pro Lys Thr Cys Pro Val Val Leu
            755                    760                   765
Pro Pro Glu Thr Arg Pro Leu Asn Gly Leu Gly Pro Pro Ser Thr
            770                    775                   780
Pro Leu Asp His Arg Gly Tyr Gln Ser Leu Ser Asp Ser Pro Pro
            785                    790                   795
Gly Ala Arg Val Phe Thr Glu Ser Glu Lys Arg Pro Leu Ser Ile
            800                    805                   810
Gln Asp Ser Phe Val Glu Val Ser Pro Val Cys Pro Arg Pro Arg
            815                    820                   825
Val Arg Leu Gly Ser Glu Ile Arg Asp Ser Val Val
            830                    835
```

<210> 254
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 254
 agcccgtgca gaatctgctc ctgg 24

<210> 255
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 255
  tgaagccagg gcagcgtcct ctgg 24

<210> 256
<211> 18
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 256
  gtacaggctg cagttggc 18

<210> 257
<211> 41
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-41
<223> Synthetic construct.

<400> 257
  agaagccatg tgagcaagtc cagttccagc ccaacacagt g 41

<210> 258
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45
<223> Synthetic construct.

<400> 258
  gagctgcaga tcttctcatc gggacagccc gtgcagaatc tgctc 45

<210> 259
<211> 4563
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 3635
<223> unknown base

<400> 259
 ctaagccgga ggatgtgcag ctgcggcggc ggcgccggct acgaagagga 50

 cggggacagg cgccgtgcga accgagccca gccagccgga ggacgcgggc 100

 agggcgggac gggagcccgg actcgtctgc cgccgccgtc gtcgccgtcg 150

242

```
tgccggcccc gcgtccccgc gcgcgagcgg gaggagccgc cgccacctcg 200

cgcccgagcc gccgctagcg cgcgccgggc atggtcccct cttaaaggcg 250

caggccgcgg cggcggggc gggtgtgcgg aacaaagcgc cggcgcgggg 300

cctgcgggcg gctcggggc cgcgatgggc gcggcgggcc cgcggcggcg 350

gcggcgctgc ccgggccggg cctcgcggcg ctaggcgggg ctggcctccg 400

tgggcggggg cagcgggctg agggcgcgcg gagcctgcgg cggcggcggc 450

ggcggcggcg gcggcccggc gggcggagcg gcgcgggcat ggccgcgcgc 500

ggccggcgcg cctggctcag cgtgctgctc gggctcgtcc tgggcttcgt 550

gctggcctcg cggctcgtcc tgccccgggc ttccgagctg aagcgagcgg 600

gcccacggcg ccgcgccagc cccgagggct gccggtccgg gcaggcggcg 650

gcttcccagg ccggcggggc gcgcggcgat gcgcgcgggg cgcagctctg 700

gccgcccggc tcggacccag atggcggccc gcgcgacagg aactttctct 750

tcgtgggagt catgaccgcc cagaaatacc tgcagactcg ggccgtggcc 800

gcctacagaa catggtccaa dacaattcct gggaaagttc agttcttctc 850

aagtgagggt tctgacacat ctgtaccaat tccagtagtg ccactacggg 900

gtgtggacga ctcctacccg ccccagaaga agtccttcat gatgctcaag 950

tacatgcacg accactactt ggacaagtat gaatggttta tgagagcaga 1000

tgatgacgtg tacatcaaag gagaccgtct ggagaacttc ctgaggagtt 1050

tgaacagcag cgagcccctc tttcttgggc agacaggcct gggcaccacg 1100

gaagaaatgg gaaaactggc cctggagcct ggtgagaact tctgcatggg 1150

ggggcctggc gtgatcatga gccgggaggt gcttcggaga atggtgccgc 1200

acattggcaa gtgtctccgg gagatgtaca ccacccatga ggacgtggag 1250

gtgggaaggt gtgtccggag gtttgcaggg gtgcagtgtg tctggtctta 1300

tgagatgcgg cagctttttt atgagaatta cgagcagaac aaaaaggggt 1350

acattagaga tctccataac agtaaaattc accaagctat cacattacac 1400

cccaacaaaa acccaccta ccagtacagg ctccacagct acatgctgag 1450

ccgcaagata tccgagctcc gccatcgcac aatacagctg caccgcgaaa 1500

ttgtcctgat gagcaaatac agcaacacag aaattcataa agaggacctc 1550

cagctgggaa tccctccctc cttcatgagg tttcagcccc gccagcgaga 1600
```

```
ggagattctg gaatgggagt ttctgactgg aaaatacttg tattcggcag 1650

ttgacggcca gcccctcga agaggaatgg actccgccca gagggaagcc 1700

ttggacgaca ttgtcatgca ggtcatggag atgatcaatg ccaacgccaa 1750

gaccagaggg cgcatcattg acttcaaaga gatccagtac ggctaccgcc 1800

gggtgaaccc catgtatggg gctgagtaca tcctggacct gctgcttctg 1850

tacaaaaagc acaaagggaa gaaaatgacg gtccctgtga ggaggcacgc 1900

gtatttacag cagactttca gcaaaatcca gtttgtggag catgaggagc 1950

tggatgcaca agagttggcc aagagaatca atcaggaatc tggatccttg 2000

tcctttctct caaactccct gaagaagctc gtccccttc agctccctgg 2050

gtcgaagagt gagcacaaag aacccaaaga taaaaagata aacatactga 2100

ttcctttgtc tgggcgtttc gacatgtttg tgagatttat gggaaacttt 2150

gagaagacgt gtcttatccc caatcagaac gtcaagctcg tggttctgct 2200

tttcaattct gactccaacc ctgacaaggc caaacaagtt gaactgatga 2250

gagattaccg cattaagtac cctaaagccg acatgcagat tttgcctgtg 2300

tctggagagt tttcaagagc cctggccctg gaagtaggat cctcccagtt 2350

taacaatgaa tctttgctct cttctgcga cgtcgacctc gtgtttacta 2400

cagaattcct tcagcgatgt cgagcaaata cagttctggg ccaacaaata 2450

tattttccaa tcatcttcag ccagtatgac ccaaagattg tttatagtgg 2500

gaaagttccc agtgacaacc attttgcctt tactcagaaa actggcttct 2550

ggagaaacta tgggtttggc atcacgtgta tttataaggg agatcttgtc 2600

cgagtgggtg gctttgatgt ttccatccaa ggctgggggc tggaggatgt 2650

ggacctttc aacaaggttg tccaggcagg tttgaagacg tttaggagcc 2700

aggaagtagg agtagtccac gtccaccatc ctgtcttttg tgatcccaat 2750

cttgacccca aacagtacaa aatgtgcttg gggtccaaag catcgaccta 2800

tgggtccacc cagcagctgg ctgagatgtg gctggaaaaa aatgatccaa 2850

gttacagtaa aagcagcaat aataatggct cagtgaggac agcctaatgt 2900

ccagctttgc tggaaaagac gtttttaatt atctaattta tttttcaaaa 2950

attttttgta tgatcagttt ttgaagtccg tatacaagga tatattttac 3000

aagtggtttt cttacatagg actcctttaa gattgagctt tctgaacaag 3050
```

244

```
aaggtgatca gtgtttgcct ttgaacacat cttcttgctg aacattatgt 3100

agcagacctg cttaactttg acttgaaatg tacctgatga acaaaacttt 3150

tttaaaaaaa tgttttcttt tgagacccct tgctccagtc ctatggcaga 3200

aaacgtgaac attcctgcaa agtattattg taacaaaaca ctgtaactct 3250

ggtaaatgtt ctgttgtgat tgttaacatt ccacagattc tacctttgt 3300

gttttgtttt tttttttac aattgtttta aagccatttc atgttccagt 3350

tgtaagataa ggaaatgtga taatagctgt ttcatcattg tcttcaggag 3400

agctttccag agttgatcat ttcctctcat ggtactctgc tcagcatggc 3450

cacgtaggtt ttttgtttgt tttgtttgt tcttttttg agacggagtc 3500

tcactctgtt acccaggctg gaatgcagtg gcgcaatctt ggctcacttt 3550

aacctccact tccctggttc aagcaattcc cctgcctttg cctcccgagt 3600

agctgggatt acaggcacac accaccacgc ccagntagtt tttttgtatt 3650

tttagtagag acggggtttc accatgcaag cccagctggc cacgtaggtt 3700

ttaaagcaag gggcgtgaag aaggcacagt gaggtatgtg gctgttctcg 3750

tggtagttca ttcggcctaa atagacctgg cattaaattt caagaaggat 3800

ttggcatttt ctcttcttga cccttctctt taaagggtaa aatattaatg 3850

tttagaatga caaagatgaa ttattacaat aaatctgatg tacacagact 3900

gaaacataca cacatacacc ctaatcaaaa cgttggggaa aaatgtattt 3950

ggttttgttc ctttcatcct gtctgtgtta tgtgggtgga gatggttttc 4000

attctttcat tactgttttg ttttatcctt tgtatctgaa ataccttaa 4050

tttatttaat atctgttgtt cagagctctg ccatttcttg agtacctgtt 4100

agttagtatt atttatgtgt atcgggagtg tgtttagtct gttttatttg 4150

cagtaaaccg atctccaaag atttcctttt ggaaacgctt tttcccctcc 4200

ttaatttta tattccttac tgttttacta aatattaagt gttctttgac 4250

aattttggtg ctcatgtgtt ttggggacaa aagtgaaatg aatctgtcat 4300

tataccagaa agttaaattc tcagatcaaa tgtgccttaa taaatttgtt 4350

ttcatttaga tttcaaacag tgatagactt gccattttaa tacacgtcat 4400

tggagggctg cgtatttgta aatagcctga tgctcatttg gaaaaataaa 4450

ccagtgaaca atattttct attgtacttt tcgaaccatt ttgtctcatt 4500
```

245

attcctgttt tagctgaaga attgtattac atttggagag taaaaaactt 4550

aaacacgaaa aaa 4563

<210> 260
<211> 802
<212> PRT
<213> Homo sapiens

<400> 260

```
Met Ala Ala Arg Gly Arg Arg Ala Trp Leu Ser Val Leu Leu Gly
 1               5                  10                  15

Leu Val Leu Gly Phe Val Leu Ala Ser Arg Leu Val Leu Pro Arg
                20                  25                  30

Ala Ser Glu Leu Lys Arg Ala Gly Pro Arg Arg Arg Ala Ser Pro
                35                  40                  45

Glu Gly Cys Arg Ser Gly Gln Ala Ala Ala Ser Gln Ala Gly Gly
                50                  55                  60

Ala Arg Gly Asp Ala Arg Gly Ala Gln Leu Trp Pro Pro Gly Ser
                65                  70                  75

Asp Pro Asp Gly Gly Pro Arg Asp Arg Asn Phe Leu Phe Val Gly
                80                  85                  90

Val Met Thr Ala Gln Lys Tyr Leu Gln Thr Arg Ala Val Ala Ala
                95                  100                 105

Tyr Arg Thr Trp Ser Lys Thr Ile Pro Gly Lys Val Gln Phe Phe
                110                 115                 120

Ser Ser Glu Gly Ser Asp Thr Ser Val Pro Ile Pro Val Val Pro
                125                 130                 135

Leu Arg Gly Val Asp Asp Ser Tyr Pro Pro Gln Lys Lys Ser Phe
                140                 145                 150

Met Met Leu Lys Tyr Met His Asp His Tyr Leu Asp Lys Tyr Glu
                155                 160                 165

Trp Phe Met Arg Ala Asp Asp Asp Val Tyr Ile Lys Gly Asp Arg
                170                 175                 180

Leu Glu Asn Phe Leu Arg Ser Leu Asn Ser Ser Glu Pro Leu Phe
                185                 190                 195

Leu Gly Gln Thr Gly Leu Gly Thr Thr Glu Glu Met Gly Lys Leu
                200                 205                 210

Ala Leu Glu Pro Gly Glu Asn Phe Cys Met Gly Gly Pro Gly Val
                215                 220                 225

Ile Met Ser Arg Glu Val Leu Arg Arg Met Val Pro His Ile Gly
                230                 235                 240
```

246

```
Lys Cys Leu Arg Glu Met Tyr Thr Thr His Glu Asp Val Glu Val
            245                 250                 255

Gly Arg Cys Val Arg Arg Phe Ala Gly Val Gln Cys Val Trp Ser
            260                 265                 270

Tyr Glu Met Arg Gln Leu Phe Tyr Glu Asn Tyr Glu Gln Asn Lys
            275                 280                 285

Lys Gly Tyr Ile Arg Asp Leu His Asn Ser Lys Ile His Gln Ala
            290                 295                 300

Ile Thr Leu His Pro Asn Lys Asn Pro Pro Tyr Gln Tyr Arg Leu
            305                 310                 315

His Ser Tyr Met Leu Ser Arg Lys Ile Ser Glu Leu Arg His Arg
            320                 325                 330

Thr Ile Gln Leu His Arg Glu Ile Val Leu Met Ser Lys Tyr Ser
            335                 340                 345

Asn Thr Glu Ile His Lys Glu Asp Leu Gln Leu Gly Ile Pro Pro
            350                 355                 360

Ser Phe Met Arg Phe Gln Pro Arg Gln Arg Glu Glu Ile Leu Glu
            365                 370                 375

Trp Glu Phe Leu Thr Gly Lys Tyr Leu Tyr Ser Ala Val Asp Gly
            380                 385                 390

Gln Pro Pro Arg Arg Gly Met Asp Ser Ala Gln Arg Glu Ala Leu
            395                 400                 405

Asp Asp Ile Val Met Gln Val Met Glu Met Ile Asn Ala Asn Ala
            410                 415                 420

Lys Thr Arg Gly Arg Ile Ile Asp Phe Lys Glu Ile Gln Tyr Gly
            425                 430                 435

Tyr Arg Arg Val Asn Pro Met Tyr Gly Ala Glu Tyr Ile Leu Asp
            440                 445                 450

Leu Leu Leu Leu Tyr Lys Lys His Lys Gly Lys Lys Met Thr Val
            455                 460                 465

Pro Val Arg Arg His Ala Tyr Leu Gln Gln Thr Phe Ser Lys Ile
            470                 475                 480

Gln Phe Val Glu His Glu Glu Leu Asp Ala Gln Glu Leu Ala Lys
            485                 490                 495

Arg Ile Asn Gln Glu Ser Gly Ser Leu Ser Phe Leu Ser Asn Ser
            500                 505                 510

Leu Lys Lys Leu Val Pro Phe Gln Leu Pro Gly Ser Lys Ser Glu
            515                 520                 525

His Lys Glu Pro Lys Asp Lys Lys Ile Asn Ile Leu Ile Pro Leu
```

247

```
              530                   535                   540
Ser Gly Arg Phe Asp Met Phe Val Arg Phe Met Gly Asn Phe Glu
              545                   550                   555
Lys Thr Cys Leu Ile Pro Asn Gln Asn Val Lys Leu Val Val Leu
              560                   565                   570
Leu Phe Asn Ser Asp Ser Asn Pro Asp Lys Ala Lys Gln Val Glu
              575                   580                   585
Leu Met Arg Asp Tyr Arg Ile Lys Tyr Pro Lys Ala Asp Met Gln
              590                   595                   600
Ile Leu Pro Val Ser Gly Glu Phe Ser Arg Ala Leu Ala Leu Glu
              605                   610                   615
Val Gly Ser Ser Gln Phe Asn Asn Glu Ser Leu Leu Phe Phe Cys
              620                   625                   630
Asp Val Asp Leu Val Phe Thr Thr Glu Phe Leu Gln Arg Cys Arg
              635                   640                   645
Ala Asn Thr Val Leu Gly Gln Gln Ile Tyr Phe Pro Ile Ile Phe
              650                   655                   660
Ser Gln Tyr Asp Pro Lys Ile Val Tyr Ser Gly Lys Val Pro Ser
              665                   670                   675
Asp Asn His Phe Ala Phe Thr Gln Lys Thr Gly Phe Trp Arg Asn
              680                   685                   690
Tyr Gly Phe Gly Ile Thr Cys Ile Tyr Lys Gly Asp Leu Val Arg
              695                   700                   705
Val Gly Gly Phe Asp Val Ser Ile Gln Gly Trp Gly Leu Glu Asp
              710                   715                   720
Val Asp Leu Phe Asn Lys Val Val Gln Ala Gly Leu Lys Thr Phe
              725                   730                   735
Arg Ser Gln Glu Val Gly Val Val His Val His His Pro Val Phe
              740                   745                   750
Cys Asp Pro Asn Leu Asp Pro Lys Gln Tyr Lys Met Cys Leu Gly
              755                   760                   765
Ser Lys Ala Ser Thr Tyr Gly Ser Thr Gln Gln Leu Ala Glu Met
              770                   775                   780
Trp Leu Glu Lys Asn Asp Pro Ser Tyr Ser Lys Ser Ser Asn Asn
              785                   790                   795
Asn Gly Ser Val Arg Thr Ala
              800
```

<210> 261
<211> 24

```
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 261
 gtgccactac ggggtgtgga cgac 24

<210> 262
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 262
 tcccatttct tccgtggtgc ccag 24

<210> 263
<211> 46
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-46
<223> Synthetic construct.

<400> 263
 ccagaagaag tccttcatga tgctcaagta catgcacgac cactac 46

<210> 264
<211> 1419
<212> DNA
<213> Homo sapiens

<400> 264
 ggacaaccgt tgctgggtgt cccagggcct gaggcaggac ggtactccgc 50

 tgacaccttc cctttcggcc ttgaggttcc cagcctggtg gccccaggac 100

 gttccggtcg catggcagag tgctacggac gacgcctatg aagcccttag 150

 tccttctagt tgcgcttttg ctatggcctt cgtctgtgcc ggcttatccg 200

 agcataactg tgacacctga tgaagagcaa aacttgaatc attatataca 250

 agttttagag aacctagtac gaagtgttcc ctctggggag ccaggtcgtg 300

 agaaaaaatc taactctcca aaacatgttt attctatagc atcaaaggga 350

 tcaaaattta aggagctagt tacacatgga gacgcttcaa ctgagaatga 400
```

249

```
tgttttaacc aatcctatca gtgaagaaac tacaactttc cctacaggag 450

gcttcacacc ggaaatagga aagaaaaaac acacggaaag taccccattc 500

tggtcgatca aaccaaacaa tgtttccatt gttttgcatg cagaggaacc 550

ttatattgaa aatgaagagc cagagccaga gccggagcca gctgcaaaac 600

aaactgaggc accaagaatg ttgccagttg ttactgaatc atctacaagt 650

ccatatgtta cctcatacaa gtcacctgtc accactttag ataagagcac 700

tggcattgag atctctacag aatcagaaga tgttcctcag ctctcaggtg 750

aaactgcgat agaaaaaccc gaagagtttg aaagcaccc agagagttgg 800

aataatgatg acattttgaa aaaaatttta gatattaatt cacaagtgca 850

acaggcactt cttagtgaca ccagcaaccc agcatataga gaagatattg 900

aagcctctaa agatcaccta aaacgaagcc ttgctctagc agcagcagca 950

gaacataaat taaaaacaat gtataagtcc cagttattgc cagtaggacg 1000

aacaagtaat aaaattgatg acatcgaaac tgttattaac atgctgtgta 1050

attctagatc taaactctat gaatatttag atattaaatg tgttccacca 1100

gagatgagag aaaaagctgc tacagtattc aatacattaa aaaatatgtg 1150

tagatcaagg agagtcacag ccttattaaa agtttattaa acaataatat 1200

aaaaattta aacctacttg atattccata caaagctga tttaagcaaa 1250

ctgcattttt tcacaggaga aataatcata ttcgtaattt caaaagttgt 1300

ataaaaatat tttctattgt agttcaaatg tgccaacatc tttatgtgtc 1350

atgtgttatg aacaattttc atatgcacta aaaacctaat ttaaaataaa 1400

attttggttc aggaaaaaa 1419
```

<210> 265
<211> 350
<212> PRT
<213> Homo sapiens

<400> 265

```
Met Lys Pro Leu Val Leu Leu Val Ala Leu Leu Leu Trp Pro Ser
 1               5                  10                  15

Ser Val Pro Ala Tyr Pro Ser Ile Thr Val Thr Pro Asp Glu Glu
                20                  25                  30

Gln Asn Leu Asn His Tyr Ile Gln Val Leu Glu Asn Leu Val Arg
                35                  40                  45

Ser Val Pro Ser Gly Glu Pro Gly Arg Glu Lys Lys Ser Asn Ser
```

```
              50                      55                      60
Pro Lys His Val Tyr Ser Ile Ala Ser Lys Gly Ser Lys Phe Lys
             65                      70                      75

Glu Leu Val Thr His Gly Asp Ala Ser Thr Glu Asn Asp Val Leu
             80                      85                      90

Thr Asn Pro Ile Ser Glu Glu Thr Thr Thr Phe Pro Thr Gly Gly
             95                     100                     105

Phe Thr Pro Glu Ile Gly Lys Lys Lys His Thr Glu Ser Thr Pro
            110                     115                     120

Phe Trp Ser Ile Lys Pro Asn Asn Val Ser Ile Val Leu His Ala
            125                     130                     135

Glu Glu Pro Tyr Ile Glu Asn Glu Glu Pro Glu Pro Glu Pro Glu
            140                     145                     150

Pro Ala Ala Lys Gln Thr Glu Ala Pro Arg Met Leu Pro Val Val
            155                     160                     165

Thr Glu Ser Ser Thr Ser Pro Tyr Val Thr Ser Tyr Lys Ser Pro
            170                     175                     180

Val Thr Thr Leu Asp Lys Ser Thr Gly Ile Glu Ile Ser Thr Glu
            185                     190                     195

Ser Glu Asp Val Pro Gln Leu Ser Gly Glu Thr Ala Ile Glu Lys
            200                     205                     210

Pro Glu Glu Phe Gly Lys His Pro Glu Ser Trp Asn Asn Asp Asp
            215                     220                     225

Ile Leu Lys Lys Ile Leu Asp Ile Asn Ser Gln Val Gln Gln Ala
            230                     235                     240

Leu Leu Ser Asp Thr Ser Asn Pro Ala Tyr Arg Glu Asp Ile Glu
            245                     250                     255

Ala Ser Lys Asp His Leu Lys Arg Ser Leu Ala Leu Ala Ala Ala
            260                     265                     270

Ala Glu His Lys Leu Lys Thr Met Tyr Lys Ser Gln Leu Leu Pro
            275                     280                     285

Val Gly Arg Thr Ser Asn Lys Ile Asp Asp Ile Glu Thr Val Ile
            290                     295                     300

Asn Met Leu Cys Asn Ser Arg Ser Lys Leu Tyr Glu Tyr Leu Asp
            305                     310                     315

Ile Lys Cys Val Pro Pro Glu Met Arg Glu Lys Ala Ala Thr Val
            320                     325                     330

Phe Asn Thr Leu Lys Asn Met Cys Arg Ser Arg Arg Val Thr Ala
            335                     340                     345
```

```
        Leu Leu Lys Val Tyr
                    350
```

```
<210> 266
<211> 2403
<212> DNA
<213> Homo sapiens

<400> 266
 cggctcgagc ggctcgagtg aagagcctct ccacggctcc tgcgcctgag 50

 acagctggcc tgacctccaa atcatccatc cacccctgct gtcatctgtt 100

 ttcatagtgt gagatcaacc cacaggaata tccatggctt ttgtgctcat 150

 tttggttctc agtttctacg agctggtgtc aggacagtgg caagtcactg 200

 gaccgggcaa gtttgtccag gccttggtgg gggaggacgc cgtgttctcc 250

 tgctccctct ttcctgagac cagtgcagag gctatggaag tgcggttctt 300

 caggaatcag ttccatgctg tggtccacct ctacagagat ggggaagact 350

 gggaatctaa gcagatgcca cagtatcgag ggagaactga gtttgtgaag 400

 gactccattg cagggggggcg tgtctctcta aggctaaaaa acatcactcc 450

 ctcggacatc ggcctgtatg ggtgctggtt cagttcccag atttacgatg 500

 aggaggccac ctgggagctg cgggtggcag cactgggctc acttcctctc 550

 atttccatcg tgggatatgt tgacggaggt atccagttac tctgcctgtc 600

 ctcaggctgg ttcccccagc ccacagccaa gtggaaaggt ccacaaggac 650

 aggatttgtc ttcagactcc agagcaaatg cagatgggta cagcctgtat 700

 gatgtggaga tctccattat agtccaggaa aatgctggga gcatattgtg 750

 ttccatccac cttgctgagc agagtcatga ggtggaatcc aaggtattga 800

 taggagagac gttttttccag ccctcacctt ggcgcctggc ttctatttta 850

 ctcgggttac tctgtggtgc cctgtgtggt gttgtcatgg ggatgataat 900

 tgttttcttc aaatccaaag ggaaaatcca ggcggaactg gactggagaa 950

 gaaagcacgg acaggcagaa ttgagagacg cccggaaaca cgcagtggag 1000

 gtgactctgg atccagagac ggctcacccg aagctctgcg tttctgatct 1050

 gaaaactgta acccatagaa aagctcccca ggaggtgcct cactctgaga 1100

 agagatttac aaggaagagt gtggtggctt ctcagggttt ccaagcaggg 1150

 agacattact gggaggtgga cgtgggacaa aatgtagggt ggtatgtggg 1200

 agtgtgtcgg gatgacgtag acaggggggaa gaacaatgtg actttgtctc 1250
```

252

```
ccaacaatgg gtattgggtc ctcagactga caacagaaca tttgtatttc 1300

acattcaatc cccattttat cagcctcccc cccagcaccc ctcctacacg 1350

agtaggggtc ttcctggact atgagggtgg gaccatctcc ttcttcaata 1400

caaatgacca gtcccttatt tataccctgc tgacatgtca gtttgaaggc 1450

ttgttgagac cctatatcca gcatgcgatg tatgacgagg aaaaggggac 1500

tcccatattc atatgtccag tgtcctgggg atgagacaga gaagaccctg 1550

cttaaagggc cccacaccac agacccagac acagccaagg gagagtgctc 1600

ccgacaggtg gccccagctt cctctccgga gcctgcgcac agagagtcac 1650

gcccccccact ctcctttagg gagctgaggt tcttctgccc tgagccctgc 1700

agcagcggca gtcacagctt ccagatgagg ggggattggc ctgaccctgt 1750

gggagtcaga agccatggct gccctgaagt ggggacggaa tagactcaca 1800

ttaggtttag tttgtgaaaa ctccatccag ctaagcgatc ttgaacaagt 1850

cacaacctcc caggctcctc atttgctagt cacggacagt gattcctgcc 1900

tcacaggtga agattaaaga gacaacgaat gtgaatcatg cttgcaggtt 1950

tgagggcaca gtgtttgcta atgatgtgtt tttatattat acattttccc 2000

accataaact ctgtttgctt attccacatt aatttacttt tctctatacc 2050

aaatcaccca tggaatagtt attgaacacc tgctttgtga ggctcaaaga 2100

ataaagagga ggtaggattt ttcactgatt ctataagccc agcattacct 2150

gataccaaaa ccaggcaaag aaaacagaag aagaggaagg aaaactacag 2200

gtccatatcc ctcattaaca cagacacaaa aattctaaat aaaattttaa 2250

caaattaaac taaacaatat atttaaagat gatatataac tactcagtgt 2300

ggtttgtccc acaaatgcag agttggttta atatttaaat atcaaccagt 2350

gtaattcagc acattaataa agtaaaaaag aaaaccataa aaaaaaaaaa 2400

aaa 2403
```

```
<210> 267
<211> 466
<212> PRT
<213> Homo sapiens

<400> 267
 Met Ala Phe Val Leu Ile Leu Val Leu Ser Phe Tyr Glu Leu Val
  1               5                  10                  15

 Ser Gly Gln Trp Gln Val Thr Gly Pro Gly Lys Phe Val Gln Ala
```

```
                20                          25                          30
Leu Val Gly Glu Asp Ala Val Phe Ser Cys Ser Leu Phe Pro Glu
            35                  40                          45
Thr Ser Ala Glu Ala Met Glu Val Arg Phe Phe Arg Asn Gln Phe
            50                  55                          60
His Ala Val Val His Leu Tyr Arg Asp Gly Glu Asp Trp Glu Ser
            65                  70                          75
Lys Gln Met Pro Gln Tyr Arg Gly Arg Thr Glu Phe Val Lys Asp
            80                  85                          90
Ser Ile Ala Gly Gly Arg Val Ser Leu Arg Leu Lys Asn Ile Thr
            95                  100                         105
Pro Ser Asp Ile Gly Leu Tyr Gly Cys Trp Phe Ser Ser Gln Ile
            110                 115                         120
Tyr Asp Glu Glu Ala Thr Trp Glu Leu Arg Val Ala Ala Leu Gly
            125                 130                         135
Ser Leu Pro Leu Ile Ser Ile Val Gly Tyr Val Asp Gly Gly Ile
            140                 145                         150
Gln Leu Leu Cys Leu Ser Ser Gly Trp Phe Pro Gln Pro Thr Ala
            155                 160                         165
Lys Trp Lys Gly Pro Gln Gly Gln Asp Leu Ser Ser Asp Ser Arg
            170                 175                         180
Ala Asn Ala Asp Gly Tyr Ser Leu Tyr Asp Val Glu Ile Ser Ile
            185                 190                         195
Ile Val Gln Glu Asn Ala Gly Ser Ile Leu Cys Ser Ile His Leu
            200                 205                         210
Ala Glu Gln Ser His Glu Val Glu Ser Lys Val Leu Ile Gly Glu
            215                 220                         225
Thr Phe Phe Gln Pro Ser Pro Trp Arg Leu Ala Ser Ile Leu Leu
            230                 235                         240
Gly Leu Leu Cys Gly Ala Leu Cys Gly Val Val Met Gly Met Ile
            245                 250                         255
Ile Val Phe Phe Lys Ser Lys Gly Lys Ile Gln Ala Glu Leu Asp
            260                 265                         270
Trp Arg Arg Lys His Gly Gln Ala Glu Leu Arg Asp Ala Arg Lys
            275                 280                         285
His Ala Val Glu Val Thr Leu Asp Pro Glu Thr Ala His Pro Lys
            290                 295                         300
Leu Cys Val Ser Asp Leu Lys Thr Val Thr His Arg Lys Ala Pro
            305                 310                         315
```

254

```
Gln Glu Val Pro His Ser Glu Lys Arg Phe Thr Arg Lys Ser Val
            320                 325                 330

Val Ala Ser Gln Gly Phe Gln Ala Gly Arg His Tyr Trp Glu Val
            335                 340                 345

Asp Val Gly Gln Asn Val Gly Trp Tyr Val Gly Val Cys Arg Asp
            350                 355                 360

Asp Val Asp Arg Gly Lys Asn Asn Val Thr Leu Ser Pro Asn Asn
            365                 370                 375

Gly Tyr Trp Val Leu Arg Leu Thr Thr Glu His Leu Tyr Phe Thr
            380                 385                 390

Phe Asn Pro His Phe Ile Ser Leu Pro Pro Ser Thr Pro Pro Thr
            395                 400                 405

Arg Val Gly Val Phe Leu Asp Tyr Glu Gly Gly Thr Ile Ser Phe
            410                 415                 420

Phe Asn Thr Asn Asp Gln Ser Leu Ile Tyr Thr Leu Leu Thr Cys
            425                 430                 435

Gln Phe Glu Gly Leu Leu Arg Pro Tyr Ile Gln His Ala Met Tyr
            440                 445                 450

Asp Glu Glu Lys Gly Thr Pro Ile Phe Ile Cys Pro Val Ser Trp
            455                 460                 465

Gly
```

```
<210> 268
<211> 2103
<212> DNA
<213> Homo sapiens

<400> 268
ccttcacagg actcttcatt gctggttggc aatgatgtat cggccagatg 50

tggtgagggc taggaaaaga gtttgttggg aaccctgggt tatcggcctc 100

gtcatcttca tatccctgat tgtcctggca gtgtgcattg gactcactgt 150

tcattatgtg agatataatc aaaagaagac ctacaattac tatagcacat 200

tgtcatttac aactgacaaa ctatatgctg agtttggcag agaggcttct 250

aacaatttta cagaaatgag ccagagactt gaatcaatgg tgaaaaatgc 300

attttataaa tctccattaa gggaagaatt tgtcaagtct caggttatca 350

agttcagtca acagaagcat ggagtgttgg ctcatatgct gttgatttgt 400

agatttcact ctactgagga tcctgaaact gtagataaaa ttgttcaact 450

tgttttacat gaaaagctgc aagatgctgt aggacccccct aaagtagatc 500
```

255

```
ctcactcagt taaaattaaa aaaatcaaca agacagaaac agacagctat 550

ctaaaccatt gctgcggaac acgaagaagt aaaactctag gtcagagtct 600

caggatcgtt ggtgggacag aagtagaaga gggtgaatgg ccctggcagg 650

ctagcctgca gtgggatggg agtcatcgct gtggagcaac cttaattaat 700

gccacatggc ttgtgagtgc tgctcactgt tttacaacat ataagaaccc 750

tgccagatgg actgcttcct ttggagtaac aataaaacct tcgaaaatga 800

aacggggtct ccggagaata attgtccatg aaaaatacaa acacccatca 850

catgactatg atatttctct tgcagagctt tctagccctg ttccctacac 900

aaatgcagta catagagttt gtctccctga tgcatcctat gagtttcaac 950

caggtgatgt gatgtttgtg acaggatttg gagcactgaa aaatgatggt 1000

tacagtcaaa atcatcttcg acaagcacag gtgactctca tagacgctac 1050

aacttgcaat gaacctcaag cttacaatga cgccataact cctagaatgt 1100

tatgtgctgg ctccttagaa ggaaaaacag atgcatgcca gggtgactct 1150

ggaggaccac tggttagttc agatgctaga gatatctggt accttgctgg 1200

aatagtgagc tggggagatg aatgtgcgaa acccaacaag cctggtgttt 1250

atactagagt tacggccttg cgggactgga ttacttcaaa aactggtatc 1300

taagagacaa aagcctcatg gaacagataa catttttttt tgttttttgg 1350

gtgtggaggc catttttaga gatacagaat tggagaagac ttgcaaaaca 1400

gctagatttg actgatctca ataaactgtt tgcttgatgc atgtattttc 1450

ttcccagctc tgttccgcac gtaagcatcc tgcttctgcc agatcaactc 1500

tgtcatctgt gagcaatagt tgaaacttta tgtacataga gaaatagata 1550

atacaatatt acattacagc ctgtattcat ttgttctcta gaagttttgt 1600

cagaattttg acttgttgac ataaatttgt aatgcatata tacaatttga 1650

agcactcctt ttcttcagtt cctcagctcc tctcatttca gcaaatatcc 1700

attttcaagg tgcagaacaa ggagtgaaag aaaatataag aagaaaaaaa 1750

tcccctacat tttattggca cagaaaagta ttaggtgttt ttcttagtgg 1800

aatattagaa atgatcatat tcattatgaa aggtcaagca aagacagcag 1850

aataccaatc acttcatcat ttaggaagta tgggaactaa gttaaggaag 1900

tccagaaaga agccaagata tatccttatt ttcatttcca aacaactact 1950
```

256

```
atgataaatg tgaagaagat tctgtttttt tgtgacctat aataattata 2000

caaacttcat gcaatgtact tgttctaagc aaattaaagc aaatatttat 2050

ttaacattgt tactgaggat gtcaacatat aacaataaaa tataaatcac 2100

cca 2103
```

<210> 269
<211> 423
<212> PRT
<213> Homo sapiens

<400> 269

```
Met Met Tyr Arg Pro Asp Val Val Arg Ala Arg Lys Arg Val Cys
 1               5                  10                  15

Trp Glu Pro Trp Val Ile Gly Leu Val Ile Phe Ile Ser Leu Ile
                20                  25                  30

Val Leu Ala Val Cys Ile Gly Leu Thr Val His Tyr Val Arg Tyr
                35                  40                  45

Asn Gln Lys Lys Thr Tyr Asn Tyr Tyr Ser Thr Leu Ser Phe Thr
                50                  55                  60

Thr Asp Lys Leu Tyr Ala Glu Phe Gly Arg Glu Ala Ser Asn Asn
                65                  70                  75

Phe Thr Glu Met Ser Gln Arg Leu Glu Ser Met Val Lys Asn Ala
                80                  85                  90

Phe Tyr Lys Ser Pro Leu Arg Glu Glu Phe Val Lys Ser Gln Val
                95                  100                 105

Ile Lys Phe Ser Gln Gln Lys His Gly Val Leu Ala His Met Leu
                110                 115                 120

Leu Ile Cys Arg Phe His Ser Thr Glu Asp Pro Glu Thr Val Asp
                125                 130                 135

Lys Ile Val Gln Leu Val Leu His Glu Lys Leu Gln Asp Ala Val
                140                 145                 150

Gly Pro Pro Lys Val Asp Pro His Ser Val Lys Ile Lys Lys Ile
                155                 160                 165

Asn Lys Thr Glu Thr Asp Ser Tyr Leu Asn His Cys Cys Gly Thr
                170                 175                 180

Arg Arg Ser Lys Thr Leu Gly Gln Ser Leu Arg Ile Val Gly Gly
                185                 190                 195

Thr Glu Val Glu Glu Gly Glu Trp Pro Trp Gln Ala Ser Leu Gln
                200                 205                 210

Trp Asp Gly Ser His Arg Cys Gly Ala Thr Leu Ile Asn Ala Thr
                215                 220                 225
```

257

```
Trp Leu Val Ser Ala Ala His Cys Phe Thr Thr Tyr Lys Asn Pro
            230             235             240

Ala Arg Trp Thr Ala Ser Phe Gly Val Thr Ile Lys Pro Ser Lys
            245             250             255

Met Lys Arg Gly Leu Arg Arg Ile Ile Val His Glu Lys Tyr Lys
            260             265             270

His Pro Ser His Asp Tyr Asp Ile Ser Leu Ala Glu Leu Ser Ser
            275             280             285

Pro Val Pro Tyr Thr Asn Ala Val His Arg Val Cys Leu Pro Asp
            290             295             300

Ala Ser Tyr Glu Phe Gln Pro Gly Asp Val Met Phe Val Thr Gly
            305             310             315

Phe Gly Ala Leu Lys Asn Asp Gly Tyr Ser Gln Asn His Leu Arg
            320             325             330

Gln Ala Gln Val Thr Leu Ile Asp Ala Thr Thr Cys Asn Glu Pro
            335             340             345

Gln Ala Tyr Asn Asp Ala Ile Thr Pro Arg Met Leu Cys Ala Gly
            350             355             360

Ser Leu Glu Gly Lys Thr Asp Ala Cys Gln Gly Asp Ser Gly Gly
            365             370             375

Pro Leu Val Ser Ser Asp Ala Arg Asp Ile Trp Tyr Leu Ala Gly
            380             385             390

Ile Val Ser Trp Gly Asp Glu Cys Ala Lys Pro Asn Lys Pro Gly
            395             400             405

Val Tyr Thr Arg Val Thr Ala Leu Arg Asp Trp Ile Thr Ser Lys
            410             415             420

Thr Gly Ile
```

<210> 270
<211> 1170
<212> DNA
<213> Homo sapiens

<400> 270
```
gtcgaaggtt ataaaagctt ccagccaaac ggcattgaag ttgaagatac 50

aacctgacag cacagcctga gatcttgggg atccctcagc ctaacaccca 100

cagacgtcag ctggtggatt cccgctgcat caaggcctac ccactgtctc 150

catgctgggc tctccctgcc ttctgtggct cctggccgtg accttcttgg 200

ttcccagagc tcagcccttg gcccctcaag actttgaaga agaggaggca 250
```

```
gatgagactg agacggcgtg gccgcctttg ccggctgtcc cctgcgacta 300
cgaccactgc cgacacctgc aggtgccctg caaggagcta cagagggtcg 350
ggccggcggc ctgcctgtgc ccaggactct ccagccccgc ccagccgccc 400
gacccgccgc gcatgggaga agtgcgcatt gcggccgaag agggccgcgc 450
agtggtccac tggtgtgccc ccttctcccc ggtcctccac tactggctgc 500
tgctttggga cggcagcgag gctgcgcaga aggggccccc gctgaacgct 550
acggtccgca gagccgaact gaaggggctg aagccagggg gcatttatgt 600
cgtttgcgta gtggccgcta cgaggccggg ggcaagccgc gtgccccagg 650
ctggaggaga gggcctcgag ggggccgaca tccctgcctt cgggccttgc 700
agccgccttg cggtgccgcc caaccccgc actctggtcc acgcggccgt 750
cggggtgggc acggccctgg ccctgctaag ctgtgccgcc ctggtgtggc 800
acttctgcct gcgcgatcgc tggggctgcc cgcgccgagc cgccgcccga 850
gccgcagggg cgctctgaaa ggggcctggg ggcatctcgg gcacagacag 900
ccccacctgg ggcgctcagc ctggccccg ggaaagagga aaacccgctg 950
cctccaggga gggctggacg gcgagctggg agccagcccc aggctccagg 1000
gccacggcgg agtcatggtt ctcaggactg agcgcttgtt taggtccggt 1050
acttggcgct ttgtttcctg gctgaggtct gggaaggaat agaaaggggc 1100
ccccaatttt tttttaagcg gccagataat aaataatgta acctttgcgg 1150
ttaaaaaaaa aaaaaaaaaa 1170
```

<210> 271
<211> 238
<212> PRT
<213> Homo sapiens

<400> 271

```
Met Leu Gly Ser Pro Cys Leu Leu Trp Leu Leu Ala Val Thr Phe
 1               5                  10                  15

Leu Val Pro Arg Ala Gln Pro Leu Ala Pro Gln Asp Phe Glu Glu
                20                  25                  30

Glu Glu Ala Asp Glu Thr Glu Thr Ala Trp Pro Pro Leu Pro Ala
                35                  40                  45

Val Pro Cys Asp Tyr Asp His Cys Arg His Leu Gln Val Pro Cys
                50                  55                  60

Lys Glu Leu Gln Arg Val Gly Pro Ala Ala Cys Leu Cys Pro Gly
                65                  70                  75
```

```
Leu Ser Ser Pro Ala Gln Pro Pro Asp Pro Pro Arg Met Gly Glu
                80              85              90

Val Arg Ile Ala Ala Glu Glu Gly Arg Ala Val Val His Trp Cys
                95              100             105

Ala Pro Phe Ser Pro Val Leu His Tyr Trp Leu Leu Leu Trp Asp
                110             115             120

Gly Ser Glu Ala Ala Gln Lys Gly Pro Pro Leu Asn Ala Thr Val
                125             130             135

Arg Arg Ala Glu Leu Lys Gly Leu Lys Pro Gly Gly Ile Tyr Val
                140             145             150

Val Cys Val Val Ala Ala Asn Glu Ala Gly Ala Ser Arg Val Pro
                155             160             165

Gln Ala Gly Gly Glu Gly Leu Glu Gly Ala Asp Ile Pro Ala Phe
                170             175             180

Gly Pro Cys Ser Arg Leu Ala Val Pro Pro Asn Pro Arg Thr Leu
                185             190             195

Val His Ala Ala Val Gly Val Gly Thr Ala Leu Ala Leu Leu Ser
                200             205             210

Cys Ala Ala Leu Val Trp His Phe Cys Leu Arg Asp Arg Trp Gly
                215             220             225

Cys Pro Arg Arg Ala Ala Ala Arg Ala Ala Gly Ala Leu
                230             235
```

<210> 272
<211> 2397
<212> DNA
<213> Homo sapiens

<400> 272
```
agagaaagaa gcgtctccag ctgaagccaa tgcagccctc cggctctccg 50

cgaagaagtt ccctgccccg atgagccccc gccgtgcgtc cccgactatc 100

cccaggcggg cgtggggcac cgggcccagc gccgacgatc gctgccgttt 150

tgcccttggg agtaggatgt ggtgaaagga tggggcttct cccttacggg 200

gctcacaatg gccagagaag attccgtgaa gtgtctgcgc tgcctgctct 250

acgccctcaa tctgctcttt tggttaatgt ccatcagtgt gttggcagtt 300

tctgcttgga tgagggacta cctaaataat gttctcactt taactgcaga 350

aacgagggta gaggaagcag tcattttgac ttactttcct gtggttcatc 400

cggtcatgat tgctgtttgc tgtttcctta tcattgtggg gatgttagga 450

tattgtggaa cggtgaaaag aaatctgttg cttcttgcat ggtactttgg 500
```

260

```
aagtttgctt gtcattttct gtgtagaact ggcttgtggc gtttggacat 550

atgaacagga acttatggtt ccagtacaat ggtcagatat ggtcactttg 600

aaagccagga tgacaaatta tggattacct agatatcggt ggcttactca 650

tgcttggaat ttttttcaga gagagtttaa gtgctgtgga gtagtatatt 700

tcactgactg gttggaaatg acagagatgg actggccccc agattcctgc 750

tgtgttagag aattcccagg atgttccaaa caggcccacc aggaagatct 800

cagtgacctt tatcaagagg gttgtgggaa gaaaatgtat tccttttttga 850

gaggaaccaa acaactgcag gtgctgaggt ttctgggaat ctccattggg 900

gtgacacaaa tcctggccat gattctcacc attactctgc tctgggctct 950

gtattatgat agaagggagc ctgggacaga ccaaatgatg tccttgaaga 1000

atgacaactc tcagcacctg tcatgtccct cagtagaact gttgaaacca 1050

agcctgtcaa gaatctttga acacacatcc atggcaaaca gctttaatac 1100

acactttgag atggaggagt tataaaaaga aatgtcacag aagaaaacca 1150

caaacttgtt ttattggact tgtgaatttt tgagtacata ctatgtgttt 1200

cagaaatatg tagaaataaa aatgttgcca taaaataaca cctaagcata 1250

tactattcta tgctttaaaa tgaggatgga aaagtttcat gtcataagtc 1300

accacctgga caataattga tgcccttaaa atgctgaaga cagatgtcat 1350

acccactgtg tagcctgtgt atgacttta ctgaacacag ttatgttttg 1400

aggcagcatg gtttgattag catttccgca tccatgcaaa cgagtcacat 1450

atggtgggac tggagccata gtaaaggttg atttacttct accaactagt 1500

atataaagta ctaattaaat gctaacatag gaagttagaa aatactaata 1550

acttttatta ctcagcgatc tattcttctg atgctaaata aattatatat 1600

cagaaaactt tcaatattgg tgactaccta aatgtgattt ttgctggtta 1650

ctaaatatt cttaccactt aaaagagcaa gctaacacat tgtcttaagc 1700

tgatcaggga tttttttgtat ataagtctgt gttaaatctg tataattcag 1750

tcgatttcag ttctgataat gttaagaata accattatga aaaggaaaat 1800

ttgtcctgta tagcatcatt attttttagcc tttcctgtta ataaagcttt 1850

actattctgt cctgggctta tattacacat ataactgtta tttaaatact 1900

taaccactaa ttttgaaaat taccagtgtg atacatagga atcattattc 1950
```

261

```
agaatgtagt ctggtcttta ggaagtatta ataagaaaat ttgcacataa 2000

cttagttgat tcagaaagga cttgtatgct gtttttctcc caaatgaaga 2050

ctcttttttga cactaaacac tttttaaaaa gcttatcttt gccttctcca 2100

aacaagaagc aatagtctcc aagtcaatat aaattctaca gaaaatagtg 2150

ttcttttttct ccagaaaaat gcttgtgaga atcattaaaa catgtgacaa 2200

tttagagatt ctttgtttta tttcactgat taatatactg tggcaaatta 2250

cacagattat taaatttttt tacaagagta tagtatattt atttgaaatg 2300

ggaaaagtgc attttactgt attttgtgta ttttgtttat ttctcagaat 2350

atggaaagaa aattaaaatg tgtcaataaa tattttctag agagtaa 2397
```

<210> 273
<211> 305
<212> PRT
<213> Homo sapiens

<400> 273

```
Met Ala Arg Glu Asp Ser Val Lys Cys Leu Arg Cys Leu Leu Tyr
 1               5                  10                  15

Ala Leu Asn Leu Leu Phe Trp Leu Met Ser Ile Ser Val Leu Ala
             20                  25                  30

Val Ser Ala Trp Met Arg Asp Tyr Leu Asn Asn Val Leu Thr Leu
             35                  40                  45

Thr Ala Glu Thr Arg Val Glu Glu Ala Val Ile Leu Thr Tyr Phe
             50                  55                  60

Pro Val Val His Pro Val Met Ile Ala Val Cys Cys Phe Leu Ile
             65                  70                  75

Ile Val Gly Met Leu Gly Tyr Cys Gly Thr Val Lys Arg Asn Leu
             80                  85                  90

Leu Leu Leu Ala Trp Tyr Phe Gly Ser Leu Leu Val Ile Phe Cys
             95                  100                 105

Val Glu Leu Ala Cys Gly Val Trp Thr Tyr Glu Gln Glu Leu Met
             110                 115                 120

Val Pro Val Gln Trp Ser Asp Met Val Thr Leu Lys Ala Arg Met
             125                 130                 135

Thr Asn Tyr Gly Leu Pro Arg Tyr Arg Trp Leu Thr His Ala Trp
             140                 145                 150

Asn Phe Phe Gln Arg Glu Phe Lys Cys Cys Gly Val Val Tyr Phe
             155                 160                 165

Thr Asp Trp Leu Glu Met Thr Glu Met Asp Trp Pro Pro Asp Ser
```

262

```
                  170                    175                    180
    Cys Cys Val Arg Glu Phe Pro Gly Cys Ser Lys Gln Ala His Gln
                    185                    190                    195
    Glu Asp Leu Ser Asp Leu Tyr Gln Glu Gly Cys Gly Lys Lys Met
                    200                    205                    210
    Tyr Ser Phe Leu Arg Gly Thr Lys Gln Leu Gln Val Leu Arg Phe
                    215                    220                    225
    Leu Gly Ile Ser Ile Gly Val Thr Gln Ile Leu Ala Met Ile Leu
                    230                    235                    240
    Thr Ile Thr Leu Leu Trp Ala Leu Tyr Tyr Asp Arg Arg Glu Pro
                    245                    250                    255
    Gly Thr Asp Gln Met Met Ser Leu Lys Asn Asp Asn Ser Gln His
                    260                    265                    270
    Leu Ser Cys Pro Ser Val Glu Leu Leu Lys Pro Ser Leu Ser Arg
                    275                    280                    285
    Ile Phe Glu His Thr Ser Met Ala Asn Ser Phe Asn Thr His Phe
                    290                    295                    300
    Glu Met Glu Glu Leu
                    305
```

<210> 274
<211> 2063
<212> DNA
<213> Homo sapiens

<400> 274

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gagagaggca gcagcttgct cagcggacaa ggatgctggg cgtgagggac 50
caaggcctgc cctgcactcg ggcctcctcc agccagtgct gaccagggac 100
ttctgacctg ctggccagcc aggacctgtg tggggaggcc tcctgctgc 150
cttggggtga caatctcagc tccaggctac agggagaccg ggaggatcac 200
agagccagca tgttacagga tcctgacagt gatcaacctc tgaacagcct 250
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aggtggggat ccccatcatc atagcactac tgagcctggc gagtatcatc 350
attgtggttg tcctcatcaa ggtgattctg gataaatact acttcctctg 400
cgggcagcct ctccacttca tcccgaggaa gcagctgtgt gacgagagc 450
tggactgtcc cttgggggag gacgaggagc actgtgtcaa gagcttcccc 500
gaagggcctg cagtggcagt ccgcctctcc aaggaccgat ccacactgca 550
ggtgctggac tcggccacag ggaactggtt ctctgcctgt ttcgacaact 600
```

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tcacagaagc tctcgctgag acagcctgta ggcagatggg ctacagcaga 650

gctgtggaga ttggcccaga ccaggatctg gatgttgttg aaatcacaga 700

aaacagccag gagcttcgca tgcggaactc aagtgggccc tgtctctcag 750

gctccctggt ctccctgcac tgtcttgcct gtgggaagag cctgaagacc 800

ccccgtgtgg tgggtgggga ggaggcctct gtggattctt ggccttggca 850

ggtcagcatc cagtacgaca aacagcacgt ctgtggaggg agcatcctgg 900

accccactg ggtcctcacg gcagcccact gcttcaggaa acataccgat 950

gtgttcaact ggaaggtgcg ggcaggctca gacaaactgg gcagcttccc 1000

atccctggct gtggccaaga tcatcatcat tgaattcaac cccatgtacc 1050

ccaaagacaa tgacatcgcc ctcatgaagc tgcagttccc actcactttc 1100

tcaggcacag tcaggcccat ctgtctgccc ttctttgatg aggagctcac 1150

tccagccacc ccactctgga tcattggatg gggctttacg aagcagaatg 1200

gagggaagat gtctgacata ctgctgcagg cgtcagtcca ggtcattgac 1250

agcacacggt gcaatgcaga cgatgcgtac caggggaag tcaccgagaa 1300

gatgatgtgt gcaggcatcc cggaaggggg tgtggacacc tgccagggtg 1350

acagtggtgg gcccctgatg taccaatctg accagtggca tgtggtgggc 1400

atcgttagct ggggctatgg ctgcgggggc ccgagcaccc caggagtata 1450

caccaaggtc tcagcctatc tcaactggat ctacaatgtc tggaaggctg 1500

agctgtaatg ctgctgcccc tttgcagtgc tgggagccgc ttccttcctg 1550

ccctgcccac ctggggatcc cccaaagtca gacacagagc aagagtcccc 1600

ttgggtacac ccctctgccc acagcctcag catttcttgg agcagcaaag 1650

ggcctcaatt cctgtaagag accctcgcag cccagaggcg cccagaggaa 1700

gtcagcagcc ctagctcggc cacacttggt gctcccagca tcccagggag 1750

agacacagcc cactgaacaa ggtctcaggg gtattgctaa gccaagaagg 1800

aactttccca cactactgaa tggaagcagg ctgtcttgta aaagcccaga 1850

tcactgtggg ctggagagga gaaggaaagg gtctgcgcca gccctgtccg 1900

tcttcaccca tccccaagcc tactagagca agaaaccagt tgtaatataa 1950

aatgcactgc cctactgttg gtatgactac cgttacctac tgttgtcatt 2000

gttattacag ctatggccac tattattaaa gagctgtgta acatctctgg 2050
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caaaaaaaaa aaa 2063

<210> 275
<211> 432
<212> PRT
<213> Homo sapiens

<400> 275

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Met Leu Gln Asp Pro Asp Ser Asp Gln Pro Leu Asn Ser Leu Asp
 1               5                  10                  15

Val Lys Pro Leu Arg Lys Pro Arg Ile Pro Met Glu Thr Phe Arg
            20                  25                  30

Lys Val Gly Ile Pro Ile Ile Ile Ala Leu Leu Ser Leu Ala Ser
            35                  40                  45

Ile Ile Ile Val Val Val Leu Ile Lys Val Ile Leu Asp Lys Tyr
            50                  55                  60

Tyr Phe Leu Cys Gly Gln Pro Leu His Phe Ile Pro Arg Lys Gln
            65                  70                  75

Leu Cys Asp Gly Glu Leu Asp Cys Pro Leu Gly Glu Asp Glu Glu
            80                  85                  90

His Cys Val Lys Ser Phe Pro Glu Gly Pro Ala Val Ala Val Arg
            95                  100                 105

Leu Ser Lys Asp Arg Ser Thr Leu Gln Val Leu Asp Ser Ala Thr
            110                 115                 120

Gly Asn Trp Phe Ser Ala Cys Phe Asp Asn Phe Thr Glu Ala Leu
            125                 130                 135

Ala Glu Thr Ala Cys Arg Gln Met Gly Tyr Ser Arg Ala Val Glu
            140                 145                 150

Ile Gly Pro Asp Gln Asp Leu Asp Val Val Glu Ile Thr Glu Asn
            155                 160                 165

Ser Gln Glu Leu Arg Met Arg Asn Ser Ser Gly Pro Cys Leu Ser
            170                 175                 180

Gly Ser Leu Val Ser Leu His Cys Leu Ala Cys Gly Lys Ser Leu
            185                 190                 195

Lys Thr Pro Arg Val Val Gly Gly Glu Glu Ala Ser Val Asp Ser
            200                 205                 210

Trp Pro Trp Gln Val Ser Ile Gln Tyr Asp Lys Gln His Val Cys
            215                 220                 225

Gly Gly Ser Ile Leu Asp Pro His Trp Val Leu Thr Ala Ala His
            230                 235                 240

Cys Phe Arg Lys His Thr Asp Val Phe Asn Trp Lys Val Arg Ala
            245                 250                 255
```

265

```
Gly Ser Asp Lys Leu Gly Ser Phe Pro Ser Leu Ala Val Ala Lys
            260                 265                 270

Ile Ile Ile Ile Glu Phe Asn Pro Met Tyr Pro Lys Asp Asn Asp
            275                 280                 285

Ile Ala Leu Met Lys Leu Gln Phe Pro Leu Thr Phe Ser Gly Thr
            290                 295                 300

Val Arg Pro Ile Cys Leu Pro Phe Phe Asp Glu Glu Leu Thr Pro
            305                 310                 315

Ala Thr Pro Leu Trp Ile Ile Gly Trp Gly Phe Thr Lys Gln Asn
            320                 325                 330

Gly Gly Lys Met Ser Asp Ile Leu Leu Gln Ala Ser Val Gln Val
            335                 340                 345

Ile Asp Ser Thr Arg Cys Asn Ala Asp Asp Ala Tyr Gln Gly Glu
            350                 355                 360

Val Thr Glu Lys Met Met Cys Ala Gly Ile Pro Glu Gly Gly Val
            365                 370                 375

Asp Thr Cys Gln Gly Asp Ser Gly Gly Pro Leu Met Tyr Gln Ser
            380                 385                 390

Asp Gln Trp His Val Val Gly Ile Val Ser Trp Gly Tyr Gly Cys
            395                 400                 405

Gly Gly Pro Ser Thr Pro Gly Val Tyr Thr Lys Val Ser Ala Tyr
            410                 415                 420

Leu Asn Trp Ile Tyr Asn Val Trp Lys Ala Glu Leu
            425                 430
```

<210> 276
<211> 3143
<212> DNA
<213> Homo sapiens

<400> 276

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gggctgaggc actgagagac cggaaagcct ggcattccag agggagggaa 50

acgcagcggc atccccaggc tccagagctc cctggtgaca gtctgtggct 100

gagcatggcc ctcccagccc tgggcctgga cccctggagc ctcctgggcc 150

ttttcctctt ccaactgctt cagctgctgc tgccgacgac gaccgcgggg 200

ggaggcgggc aggggcccat gcccagggtc agatactatg caggggatga 250

acgtagggca cttagcttct tccaccagaa gggcctccag gattttgaca 300

ctctgctcct gagtggtgat ggaaatactc tctacgtggg ggctcgagaa 350

gccattctgg ccttggatat ccaggatcca ggggtcccca ggctaaagaa 400
```

266

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ctgtcagcct tggcctctta ttattggagt catggcccag cagcagtccc 1900

agaagcctct tccactgtct acaatggctc cctcttgctg atagtgcagg 1950

atggagttgg gggtctctac cagtgctggg caactgagaa tggcttttca 2000

taccctgtga tctcctactg ggtggacagc caggaccaga ccctggccct 2050

ggatcctgaa ctggcaggca tcccccggga gcatgtgaag gtcccgttga 2100

ccagggtcag tggtgggggcc gccctggctg cccagcagtc ctactggccc 2150

cactttgtca ctgtcactgt cctctttgcc ttagtgcttt caggagccct 2200

catcatcctc gtggcctccc cattgagagc actccgggct cggggcaagg 2250

ttcagggctg tgagaccctg cgccctgggg agaaggcccc gttaagcaga 2300

gagcaacacc tccagtctcc caaggaatgc aggacctctg ccagtgatgt 2350

ggacgctgac aacaactgcc taggcactga ggtagcttaa actctaggca 2400

caggccgggg ctgcggtgca ggcacctggc catgctggct gggcggccca 2450

agcacagccc tgactaggat gacagcagca caaaagacca cctttctccc 2500

ctgagaggag cttctgctac tctgcatcac tgatgacact cagcagggtg 2550

atgcacagca gtctgcctcc cctatgggac tcccttctac caagcacatg 2600

agctctctaa cagggtgggg gctaccccca gacctgctcc tacactgata 2650

ttgaagaacc tggagaggat ccttcagttc tggccattcc agggaccctc 2700

cagaaacaca gtgtttcaag agaccctaaa aaacctgcct gtcccaggac 2750

cctatggtaa tgaacaccaa acatctaaac aatcatatgc taacatgcca 2800

ctcctggaaa ctccactctg aagctgccgc tttggacacc aacactccct 2850

tctcccaggg tcatgcaggg atctgctccc tcctgcttcc cttaccagtc 2900

gtgcaccgct gactcccagg aagtctttcc tgaagtctga ccacctttct 2950

tcttgcttca gttggggcag actctgatcc cttctgccct ggcagaatgg 3000

cagggggtaat ctgagccttc ttcactcctt taccctagct gaccccttca 3050

cctctccccc tcccttttcc tttgttttgg gattcagaaa actgcttgtc 3100

agagactgtt tattttttat taaaaatata aggcttaaaa aaa 3143
```

<210> 277
<211> 761
<212> PRT
<213> Homo sapiens

<400> 277

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Met Ala Leu Pro Ala Leu Gly Leu Asp Pro Trp Ser Leu Leu Gly
 1               5                  10                      15

Leu Phe Leu Phe Gln Leu Leu Gln Leu Leu Leu Pro Thr Thr Thr
               20                  25                      30

Ala Gly Gly Gly Gly Gln Gly Pro Met Pro Arg Val Arg Tyr Tyr
               35                  40                      45

Ala Gly Asp Glu Arg Arg Ala Leu Ser Phe Phe His Gln Lys Gly
               50                  55                      60

Leu Gln Asp Phe Asp Thr Leu Leu Leu Ser Gly Asp Gly Asn Thr
               65                  70                      75

Leu Tyr Val Gly Ala Arg Glu Ala Ile Leu Ala Leu Asp Ile Gln
               80                  85                      90

Asp Pro Gly Val Pro Arg Leu Lys Asn Met Ile Pro Trp Pro Ala
               95                  100                     105

Ser Asp Arg Lys Lys Ser Glu Cys Ala Phe Lys Lys Lys Ser Asn
               110                 115                     120

Glu Thr Gln Cys Phe Asn Phe Ile Arg Val Leu Val Ser Tyr Asn
               125                 130                     135

Val Thr His Leu Tyr Thr Cys Gly Thr Phe Ala Phe Ser Pro Ala
               140                 145                     150

Cys Thr Phe Ile Glu Leu Gln Asp Ser Tyr Leu Leu Pro Ile Ser
               155                 160                     165

Glu Asp Lys Val Met Glu Gly Lys Gly Gln Ser Pro Phe Asp Pro
               170                 175                     180

Ala His Lys His Thr Ala Val Leu Val Asp Gly Met Leu Tyr Ser
               185                 190                     195

Gly Thr Met Asn Asn Phe Leu Gly Ser Glu Pro Ile Leu Met Arg
               200                 205                     210

Thr Leu Gly Ser Gln Pro Val Leu Lys Thr Asp Asn Phe Leu Arg
               215                 220                     225

Trp Leu His His Asp Ala Ser Phe Val Ala Ala Ile Pro Ser Thr
               230                 235                     240

Gln Val Val Tyr Phe Phe Phe Glu Glu Thr Ala Ser Glu Phe Asp
               245                 250                     255

Phe Phe Glu Arg Leu His Thr Ser Arg Val Ala Arg Val Cys Lys
               260                 265                     270

Asn Asp Val Gly Gly Glu Lys Leu Leu Gln Lys Lys Trp Thr Thr
               275                 280                     285

Phe Leu Lys Ala Gln Leu Leu Cys Thr Gln Pro Gly Gln Leu Pro
```

269

```
                    290                     295                     300
Phe Asn Val Ile Arg His Ala Val Leu Leu Pro Ala Asp Ser Pro
                305                     310                     315
Thr Ala Pro His Ile Tyr Ala Val Phe Thr Ser Gln Trp Gln Val
                320                     325                     330
Gly Gly Thr Arg Ser Ser Ala Val Cys Ala Phe Ser Leu Leu Asp
                335                     340                     345
Ile Glu Arg Val Phe Lys Gly Lys Tyr Lys Glu Leu Asn Lys Glu
                350                     355                     360
Thr Ser Arg Trp Thr Thr Tyr Arg Gly Pro Glu Thr Asn Pro Arg
                365                     370                     375
Pro Gly Ser Cys Ser Val Gly Pro Ser Ser Asp Lys Ala Leu Thr
                380                     385                     390
Phe Met Lys Asp His Phe Leu Met Asp Glu Gln Val Val Gly Thr
                395                     400                     405
Pro Leu Leu Val Lys Ser Gly Val Glu Tyr Thr Arg Leu Ala Val
                410                     415                     420
Glu Thr Ala Gln Gly Leu Asp Gly His Ser His Leu Val Met Tyr
                425                     430                     435
Leu Gly Thr Thr Thr Gly Ser Leu His Lys Ala Val Val Ser Gly
                440                     445                     450
Asp Ser Ser Ala His Leu Val Glu Glu Ile Gln Leu Phe Pro Asp
                455                     460                     465
Pro Glu Pro Val Arg Asn Leu Gln Leu Ala Pro Thr Gln Gly Ala
                470                     475                     480
Val Phe Val Gly Phe Ser Gly Gly Val Trp Arg Val Pro Arg Ala
                485                     490                     495
Asn Cys Ser Val Tyr Glu Ser Cys Val Asp Cys Val Leu Ala Arg
                500                     505                     510
Asp Pro His Cys Ala Trp Asp Pro Glu Ser Arg Thr Cys Cys Leu
                515                     520                     525
Leu Ser Ala Pro Asn Leu Asn Ser Trp Lys Gln Asp Met Glu Arg
                530                     535                     540
Gly Asn Pro Glu Trp Ala Cys Ala Ser Gly Pro Met Ser Arg Ser
                545                     550                     555
Leu Arg Pro Gln Ser Arg Pro Gln Ile Ile Lys Glu Val Leu Ala
                560                     565                     570
Val Pro Asn Ser Ile Leu Glu Leu Pro Cys Pro His Leu Ser Ala
                575                     580                     585
```

270

```
Leu Ala Ser Tyr Tyr Trp Ser His Gly Pro Ala Ala Val Pro Glu
            590             595                 600

Ala Ser Ser Thr Val Tyr Asn Gly Ser Leu Leu Leu Ile Val Gln
            605             610                 615

Asp Gly Val Gly Gly Leu Tyr Gln Cys Trp Ala Thr Glu Asn Gly
            620             625                 630

Phe Ser Tyr Pro Val Ile Ser Tyr Trp Val Asp Ser Gln Asp Gln
            635             640                 645

Thr Leu Ala Leu Asp Pro Glu Leu Ala Gly Ile Pro Arg Glu His
            650             655                 660

Val Lys Val Pro Leu Thr Arg Val Ser Gly Gly Ala Ala Leu Ala
            665             670                 675

Ala Gln Gln Ser Tyr Trp Pro His Phe Val Thr Val Thr Val Leu
            680             685                 690

Phe Ala Leu Val Leu Ser Gly Ala Leu Ile Ile Leu Val Ala Ser
            695             700                 705

Pro Leu Arg Ala Leu Arg Ala Arg Gly Lys Val Gln Gly Cys Glu
            710             715                 720

Thr Leu Arg Pro Gly Glu Lys Ala Pro Leu Ser Arg Glu Gln His
            725             730                 735

Leu Gln Ser Pro Lys Glu Cys Arg Thr Ser Ala Ser Asp Val Asp
            740             745                 750

Ala Asp Asn Asn Cys Leu Gly Thr Glu Val Ala
            755             760
```

<210> 278
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 278
 ctgctggtga aatctggcgt ggag 24

<210> 279
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

271

<400> 279
 gtctggtcct ggctgtccac ccag 24

<210> 280
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45
<223> Synthetic construct.

<400> 280
 catcttgtca tgtacctggg aaccaccaca gggtcgctcc acaag 45

<210> 281
<211> 2320
<212> DNA
<213> Homo sapiens

<400> 281
 agggtccctt agccgggcgc agggcgcgca gcccaggctg agatccgcgg 50

 cttccgtaga agtgagcatg gctgggcagc gagtgcttct tctagtgggc 100

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 atctacagta ggtggaagcc attatctact gatggaccgg gtttctcaga 200

 ttcttcaaga tcacggtcat aatgtcacca tgcttaacca caaaagaggt 250

 ccttttatgc cagattttaa aaaggaagaa aaatcatatc aagttatcag 300

 ttggcttgca cctgaagatc atcaaagaga atttaaaaag agttttgatt 350

 tctttctgga agaaacttta ggtggcagag gaaaatttga aaacttatta 400

 aatgttctag aatacttggc gttgcagtgc agtcattttt taaatagaaa 450

 ggatatcatg gattccttaa agaatgagaa cttcgacatg gtgatagttg 500

 aaacttttga ctactgtcct ttcctgattg ctgagaagct tgggaagcca 550

 tttgtggcca ttctttccac ttcattcggc tctttggaat ttgggctacc 600

 aatccccttg tcttatgttc cagtattccg ttccttgctg actgatcaca 650

 tggacttctg gggccgagtg aagaattttc tgatgttctt tagtttctgc 700

 aggaggcaac agcacatgca gtctacattt gacaacacca tcaaggaaca 750

 tttcacagaa ggctctaggc cagttttgtc tcatcttcta ctgaaagcag 800

 agttgtggtt cattaactct gactttgcct ttgattttgc tcgacctctg 850

 cttcccaaca ctgtttatgt tggaggcttg atggaaaaac ctattaaacc 900

272

273

<400> 282

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Met Ala Gly Gln Arg Val Leu Leu Leu Val Gly Phe Leu Leu Pro
1               5                   10                  15

Gly Val Leu Leu Ser Glu Ala Ala Lys Ile Leu Thr Ile Ser Thr
            20                  25                  30

Val Gly Gly Ser His Tyr Leu Leu Met Asp Arg Val Ser Gln Ile
            35                  40                  45

Leu Gln Asp His Gly His Asn Val Thr Met Leu Asn His Lys Arg
            50                  55                  60

Gly Pro Phe Met Pro Asp Phe Lys Lys Glu Glu Lys Ser Tyr Gln
            65                  70                  75

Val Ile Ser Trp Leu Ala Pro Glu Asp His Gln Arg Glu Phe Lys
            80                  85                  90

Lys Ser Phe Asp Phe Phe Leu Glu Glu Thr Leu Gly Gly Arg Gly
            95                  100                 105

Lys Phe Glu Asn Leu Leu Asn Val Leu Glu Tyr Leu Ala Leu Gln
            110                 115                 120

Cys Ser His Phe Leu Asn Arg Lys Asp Ile Met Asp Ser Leu Lys
            125                 130                 135

Asn Glu Asn Phe Asp Met Val Ile Val Glu Thr Phe Asp Tyr Cys
            140                 145                 150

Pro Phe Leu Ile Ala Glu Lys Leu Gly Lys Pro Phe Val Ala Ile
            155                 160                 165

Leu Ser Thr Ser Phe Gly Ser Leu Glu Phe Gly Leu Pro Ile Pro
            170                 175                 180

Leu Ser Tyr Val Pro Val Phe Arg Ser Leu Leu Thr Asp His Met
            185                 190                 195

Asp Phe Trp Gly Arg Val Lys Asn Phe Leu Met Phe Phe Ser Phe
            200                 205                 210

Cys Arg Arg Gln Gln His Met Gln Ser Thr Phe Asp Asn Thr Ile
            215                 220                 225

Lys Glu His Phe Thr Glu Gly Ser Arg Pro Val Leu Ser His Leu
            230                 235                 240

Leu Leu Lys Ala Glu Leu Trp Phe Ile Asn Ser Asp Phe Ala Phe
            245                 250                 255

Asp Phe Ala Arg Pro Leu Leu Pro Asn Thr Val Tyr Val Gly Gly
```

274

Leu Met Glu Lys Pro Ile Lys Pro Val Pro Gln Asp Leu Glu Asn
                275   280   285

Phe Ile Ala Lys Phe Gly Asp Ser Gly Phe Val Leu Val Thr Leu
                290   295   300

Gly Ser Met Val Asn Thr Cys Gln Asn Pro Glu Ile Phe Lys Glu
                305   310   315

Met Asn Asn Ala Phe Ala His Leu Pro Gln Gly Val Ile Trp Lys
                320   325   330

Cys Gln Cys Ser His Trp Pro Lys Asp Val His Leu Ala Ala Asn
                335   340   345

Val Lys Ile Val Asp Trp Leu Pro Gln Ser Asp Leu Leu Ala His
                350   355   360

Pro Ser Ile Arg Leu Phe Val Thr His Gly Gly Gln Asn Ser Ile
                365   370   375

Met Glu Ala Ile Gln His Gly Val Pro Met Val Gly Ile Pro Leu
                380   385   390

Phe Gly Asp Gln Pro Glu Asn Met Val Arg Val Glu Ala Lys Lys
                395   400   405

Phe Gly Val Ser Ile Gln Leu Lys Lys Leu Lys Ala Glu Thr Leu
                410   415   420

Ala Leu Lys Met Lys Gln Ile Met Glu Asp Lys Arg Tyr Lys Ser
                425   430   435

Ala Ala Val Ala Ala Ser Val Ile Leu Arg Ser His Pro Leu Ser
                440   445   450

Pro Thr Gln Arg Leu Val Gly Trp Ile Asp His Val Leu Gln Thr
                455   460   465

Gly Gly Ala Thr His Leu Lys Pro Tyr Val Phe Gln Gln Pro Trp
                470   475   480

His Glu Gln Tyr Leu Phe Asp Val Phe Val Phe Leu Leu Gly Leu
                485   490   495

Thr Leu Gly Thr Leu Trp Leu Cys Gly Lys Leu Leu Gly Met Ala
                500   505   510

Val Trp Trp Leu Arg Gly Ala Arg Lys Val Lys Glu Thr
                515   520

<210> 283
<211> 24
<212> DNA
<213> Artificial

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<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 283
 tgcctttgct cacctacccc aagg 24

<210> 284
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 284
 tcaggctggt ctccaaagag aggg 24

<210> 285
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45
<223> Synthetic construct.

<400> 285
 cccaaagatg tccacctggc tgcaaatgtg aaaattgtgg actgg 45

<210> 286
<211> 2340
<212> DNA
<213> Homo sapiens

<400> 286
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 ggttgagggg ctgcctctgg catatgcaca cactcacaca ttctgtcaca 100

 cccgtcacac acacatacca tgttctccat ccccccaggt ccagccctca 150

 gtgctgtccc atccagcagg gctaccctga agctctggct gcagccctcc 200

 cgtccagtgg gcaggcggct tcatccctcc tttctctccc aaagcccaac 250

 tgctgtcact gcatgctctg ccaaggagga gggaactgca gtgacagcag 300

 gagtaagagt gggaggcagg acagagctgg gacacaggta tggagagggg 350

 gttcagcgag cctagagagg gcagactatc agggtgccgg cggtgagaat 400

 ccagggagag gagcggaaac agaagagggg cagaagaccg gggcacttgt 450
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276

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gggttgcaga gcccctcagc catgttggga gccaagccac actggctacc 500

aggtcccta cacagtcccg ggctgcctt ggttctggtg cttctggccc 550

tgggggccgg gtgggcccag gaggggtcag agcccgtcct gctggagggg 600

gagtgcctgg tggtctgtga gcctggccga gctgctgcag gggggcccgg 650

gggagcagcc ctgggagagg cacccctgg gcgagtggca tttgctgcgg 700

tccgaagcca ccaccatgag ccagcagggg aaaccggcaa tggcaccagt 750

ggggccatct acttcgacca ggtcctggtg aacgagggcg gtggctttga 800

ccgggcctct ggctccttcg tagccctgt ccggggtgtc tacagcttcc 850

ggttccatgt ggtgaaggtg tacaaccgcc aaactgtcca ggtgagcctg 900

atgctgaaca cgtggcctgt catctcagcc tttgccaatg atcctgacgt 950

gacccgggag gcagccacca gctctgtgct actgcccttg gaccctgggg 1000

accgagtgtc tctgcgcctg cgtcggggga atctactggg tggttggaaa 1050

tactcaagtt tctctggctt cctcatcttc cctctctgag gacccaagtc 1100

tttcaagcac aagaatccag ccctgacaa ctttcttctg ccctctcttg 1150

ccccagaaac agcagaggca ggagagagac tccctctggc tcctatccca 1200

cctctttgca tgggaccctg tgccaaacac ccaagtttaa gagaagagta 1250

gagctgtggc atctccagac caggcctttc cacccaccca ccccagtta 1300

ccctcccagc cacctgctgc atctgttcct gcctgcagcc ctaggatcag 1350

ggcaaggttt ggcaagaagg aagatctgca ctactttgcg gcctctgctc 1400

ctccggttcc cccaccccag cttcctgctc aatgctgatc agggacaggt 1450

ggcgcaggtg agcctgacag gcccccacag gagcccagat ggacaagcct 1500

cagcgtaccc tgcaggcttc ttcctgtgag gaaagccagc atcacggatc 1550

tcagccagca ccgtcagaag ctgagccagc accgtatggg ctagggtggg 1600

aggctcagcc acaggcagaa gggtgggaag ggcctggagt ctgtggctgg 1650

tgaggaagga aggagggtgt attgtctaga ctgaacatgg tacacattct 1700

gcatgtatag cagagcagcc agcaggtagc aatcctggct gtccttctat 1750

gctggatccc agatggactc tggcccttac ctccccacct gagattaggg 1800

tgagtgtgtt tgctctggct gagagcagag ctgagagcag gtatacagag 1850

ctggaagtgg accatggaaa acatcgataa ccatgcatcc tcttgcttgg 1900
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277

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ccacctcctg aaactgctcc acctttgaag tttgaacttt agtccctcca 1950

cactctgact gctgcctcct tcctcccagc tctctcactg agttatcttc 2000

actgtacctg ttccagcata tccccactat ctctctttct cctgatctgt 2050

gctgtcttat tctcctcctt aggcttccta ttacctggga ttccatgatt 2100

cattccttca gaccctctcc tgccagtatg ctaaaccctc cctctctctt 2150

tcttatcccg ctgtcccatt ggcccagcct ggatgaatct atcaataaaa 2200

caactagaga atggtggtca gtgagacact atagaattac taaggagaag 2250

atgcctctgg agtttggatc gggtgttaca ggtacaagta ggtatgttgc 2300

agaggaaaat aaatatcaaa ctgtatacta aaattaaaaa 2340
```

<210> 287
<211> 205
<212> PRT
<213> Homo sapiens

<400> 287

```
Met Leu Gly Ala Lys Pro His Trp Leu Pro Gly Pro Leu His Ser
  1               5                  10                  15

Pro Gly Leu Pro Leu Val Leu Val Leu Leu Ala Leu Gly Ala Gly
                20                  25                  30

Trp Ala Gln Glu Gly Ser Glu Pro Val Leu Leu Glu Gly Glu Cys
                35                  40                  45

Leu Val Val Cys Glu Pro Gly Arg Ala Ala Ala Gly Gly Pro Gly
                50                  55                  60

Gly Ala Ala Leu Gly Glu Ala Pro Pro Gly Arg Val Ala Phe Ala
                65                  70                  75

Ala Val Arg Ser His His His Glu Pro Ala Gly Glu Thr Gly Asn
                80                  85                  90

Gly Thr Ser Gly Ala Ile Tyr Phe Asp Gln Val Leu Val Asn Glu
                95                  100                 105

Gly Gly Gly Phe Asp Arg Ala Ser Gly Ser Phe Val Ala Pro Val
                110                 115                 120

Arg Gly Val Tyr Ser Phe Arg Phe His Val Val Lys Val Tyr Asn
                125                 130                 135

Arg Gln Thr Val Gln Val Ser Leu Met Leu Asn Thr Trp Pro Val
                140                 145                 150

Ile Ser Ala Phe Ala Asn Asp Pro Asp Val Thr Arg Glu Ala Ala
                155                 160                 165

Thr Ser Ser Val Leu Leu Pro Leu Asp Pro Gly Asp Arg Val Ser
```

278

```
              170                    175                    180
   Leu Arg Leu Arg Arg Gly Asn Leu Leu Gly Gly Trp Lys Tyr Ser
                  185                    190                    195

   Ser Phe Ser Gly Phe Leu Ile Phe Pro Leu
                  200                    205
```

<210> 288
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 288
 aggcagccac cagctctgtg ctac 24

<210> 289
<211> 27
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-27
<223> Synthetic construct.

<400> 289
 cagagaggga agatgaggaa gccagag 27

<210> 290
<211> 42
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-42
<223> Synthetic construct.

<400> 290
 ctgtgctact gcccttggac cctggggacc gagtgtctct gc 42

<210> 291
<211> 1570
<212> DNA
<213> Homo sapiens

<400> 291
 gctgtttctc tcgcgccacc actggccgcc ggccgcagct ccaggtgtcc 50

 tagccgccca gcctcgacgc cgtcccggga cccctgtgct ctgcgcgaag 100

 ccctggcccc gggggccggg gcatgggcca ggggcgcggg gtgaagcggc 150

```
ttcccgcggg gccgtgactg ggcgggcttc agccatgaag accctcatag 200

ccgcctactc cggggtcctg cgcggcgagc gtcaggccga ggctgaccgg 250

agccagcgct ctcacggagg acctgcgctg tcgcgcgagg ggtctgggag 300

atggggcact ggatccagca tcctctccgc cctccaggac ctcttctctg 350

tcacctggct caataggtcc aaggtggaaa agcagctaca ggtcatctca 400

gtgctccagt gggtcctgtc cttccttgta ctgggagtgg cctgcagtgc 450

catcctcatg tacatattct gcactgattg ctggctcatc gctgtgctct 500

acttcacttg gctggtgttt gactggaaca cacccaagaa aggtggcagg 550

aggtcacagt gggtccgaaa ctgggctgtg tggcgctact ttcgagacta 600

ctttcccatc cagctggtga agacacacaa cctgctgacc accaggaact 650

atatctttgg ataccacccc catggtatca tgggcctggg tgccttctgc 700

aacttcagca cagaggccac agaagtgagc aagaagttcc caggcatacg 750

gccttacctg gctacactgg caggcaactt ccgaatgcct gtgttgaggg 800

agtacctgat gtctggaggt atctgccctg tcagccggga caccatagac 850

tatttgcttt caaagaatgg gagtggcaat gctatcatca tcgtggtcgg 900

gggtgcggct gagtctctga gctccatgcc tggcaagaat gcagtcaccc 950

tgcggaaccg caagggcttt gtgaaactgg ccctgcgtca tggagctgac 1000

ctggttccca tctactcctt tggagagaat gaagtgtaca agcaggtgat 1050

cttcgaggag ggctcctggg gccgatgggt ccagaagaag ttccagaaat 1100

acattggttt cgccccatgc atcttccatg gtcgaggcct cttctcctcc 1150

gacacctggg ggctggtgcc ctactccaag cccatcacca ctgttgtggg 1200

agagcccatc accatcccca agctggagca cccaacccag caagacatcg 1250

acctgtacca caccatgtac atggaggccc tggtgaagct cttcgacaag 1300

cacaagacca agttcggcct cccggagact gaggtcctgg aggtgaactg 1350

agccagcctt cggggccaat tccctggagg aaccagctgc aaatcacttt 1400

tttgctctgt aaatttggaa gtgtcatggg tgtctgtggg ttatttaaaa 1450

gaaattataa caattttgct aaaccaaaaa aaaaaaaaaa aaaaaaaaaa 1500

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1550

aaaaaaaaaa aaaaaaaaaa 1570
```

<210> 292
<211> 388
<212> PRT
<213> Homo sapiens

<400> 292

```
Met Lys Thr Leu Ile Ala Ala Tyr Ser Gly Val Leu Arg Gly Glu
1               5                  10                  15

Arg Gln Ala Glu Ala Asp Arg Ser Gln Arg Ser His Gly Gly Pro
             20                  25                  30

Ala Leu Ser Arg Glu Gly Ser Gly Arg Trp Gly Thr Gly Ser Ser
             35                  40                  45

Ile Leu Ser Ala Leu Gln Asp Leu Phe Ser Val Thr Trp Leu Asn
             50                  55                  60

Arg Ser Lys Val Glu Lys Gln Leu Gln Val Ile Ser Val Leu Gln
             65                  70                  75

Trp Val Leu Ser Phe Leu Val Leu Gly Val Ala Cys Ser Ala Ile
             80                  85                  90

Leu Met Tyr Ile Phe Cys Thr Asp Cys Trp Leu Ile Ala Val Leu
             95                 100                 105

Tyr Phe Thr Trp Leu Val Phe Asp Trp Asn Thr Pro Lys Lys Gly
            110                 115                 120

Gly Arg Arg Ser Gln Trp Val Arg Asn Trp Ala Val Trp Arg Tyr
            125                 130                 135

Phe Arg Asp Tyr Phe Pro Ile Gln Leu Val Lys Thr His Asn Leu
            140                 145                 150

Leu Thr Thr Arg Asn Tyr Ile Phe Gly Tyr His Pro His Gly Ile
            155                 160                 165

Met Gly Leu Gly Ala Phe Cys Asn Phe Ser Thr Glu Ala Thr Glu
            170                 175                 180

Val Ser Lys Lys Phe Pro Gly Ile Arg Pro Tyr Leu Ala Thr Leu
            185                 190                 195

Ala Gly Asn Phe Arg Met Pro Val Leu Arg Glu Tyr Leu Met Ser
            200                 205                 210

Gly Gly Ile Cys Pro Val Ser Arg Asp Thr Ile Asp Tyr Leu Leu
            215                 220                 225

Ser Lys Asn Gly Ser Gly Asn Ala Ile Ile Val Val Gly Gly
            230                 235                 240

Ala Ala Glu Ser Leu Ser Ser Met Pro Gly Lys Asn Ala Val Thr
            245                 250                 255

Leu Arg Asn Arg Lys Gly Phe Val Lys Leu Ala Leu Arg His Gly
```

```
                    260                      265                      270
    Ala Asp Leu Val Pro Ile Tyr Ser Phe Gly Glu Asn Glu Val Tyr
                    275                      280                      285

    Lys Gln Val Ile Phe Glu Glu Gly Ser Trp Gly Arg Trp Val Gln
                    290                      295                      300

    Lys Lys Phe Gln Lys Tyr Ile Gly Phe Ala Pro Cys Ile Phe His
                    305                      310                      315

    Gly Arg Gly Leu Phe Ser Ser Asp Thr Trp Gly Leu Val Pro Tyr
                    320                      325                      330

    Ser Lys Pro Ile Thr Thr Val Val Gly Glu Pro Ile Thr Ile Pro
                    335                      340                      345

    Lys Leu Glu His Pro Thr Gln Gln Asp Ile Asp Leu Tyr His Thr
                    350                      355                      360

    Met Tyr Met Glu Ala Leu Val Lys Leu Phe Asp Lys His Lys Thr
                    365                      370                      375

    Lys Phe Gly Leu Pro Glu Thr Glu Val Leu Glu Val Asn
                    380                      385
```

<210> 293
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 293
 gctgacctgg ttcccatcta ctcc 24

<210> 294
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 294
 cccacagaca cccatgacac ttcc 24

<210> 295
<211> 50
<212> DNA
<213> Artificial

<220>

<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 295
 aagaatgaat tgtacaaagc aggtgatctt cgaggagggc tcctggggcc 50

<210> 296
<211> 3060
<212> DNA
<213> Homo sapiens

<400> 296
 gggcggcggg atggggccg ggggcggcgg cgccgcact cgctgaggcc 50

 ccgacgcagg gccgggccgg gcccagggcc gaggagcgcg gcggccagag 100

 cggggccgcg gaggcgacgc cggggacgcc cgcgcgacga gcaggtggcg 150

 gcggctgcag gcttgtccag ccggaagccc tgagggcagc tgttcccact 200

 ggctctgctg accttgtgcc ttggacggct gtcctcagcg aggggccgtg 250

 cacccgctcc tgagcagcgc catgggcctg ctggccttcc tgaagaccca 300

 gttcgtgctg cacctgctgg tcggctttgt cttcgtggtg agtggtctgg 350

 tcatcaactt cgtccagctg tgcacgctgg cgctctggcc ggtcagcaag 400

 cagctctacc gccgcctcaa ctgccgcctc gcctactcac tctggagcca 450

 actggtcatg ctgctggagt ggtggtcctg cacggagtgt acactgttca 500

 cggaccaggc cacggtagag cgctttggga aggagcacgc agtcatcatc 550

 ctcaaccaca acttcgagat cgacttcctc tgtgggtgga ccatgtgtga 600

 gcgcttcgga gtgctgggga gctccaaggt cctcgctaag aaggagctgc 650

 tctacgtgcc cctcatcggc tggacgtggt actttctgga gattgtgttc 700

 tgcaagcgga agtgggagga ggaccgggac accgtggtcg aagggctgag 750

 gcgcctgtcg gactaccccg agtacatgtg gtttctcctg tactgcgagg 800

 ggacgcgctt cacggagacc aagcaccgcg ttagcatgga ggtggcggct 850

 gctaaggggc ttcctgtcct caagtaccac ctgctgccgc ggaccaaggg 900

 cttcaccacc gcagtcaagt gcctccgggg gacagtcgca gctgtctatg 950

 atgtaaccct gaacttcaga ggaaacaaga acccgtccct gctgggatc 1000

 ctctacggga agaagtacga ggcggacatg tgcgtgagga gatttcctct 1050

 ggaagacatc ccgctggatg aaaaggaagc agctcagtgg cttcataaac 1100

 tgtaccagga gaaggacgcg ctccaggaga tatataatca gaagggcatg 1150

283

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tttccagggg agcagtttaa gcctgcccgg aggccgtgga ccctcctgaa 1200

cttcctgtcc tgggccacca ttctcctgtc tcccctcttc agttttgtct 1250

tgggcgtctt tgccagcgga tcacctctcc tgatcctgac tttcttgggg 1300

tttgtgggag cagcttcctt tggagttcgc agactgatag gagaatcgct 1350

tgaacctggg aggtggagat tgcagtgagc tgagatggca tcactgtact 1400

ccagcctagg caacagagca agactcagtc tcaaaaaaaa aaaaaaacaa 1450

aaaaacccca gaaattctgg agttgaactg tgtagttact gacatgaaaa 1500

attcactaga ggctgaacag cagatttgag caggcagaaa aaaatcagca 1550

agcttgaaga tggtaccttg agatttttca ggctaatgaa aaaagaatga 1600

aggaaaatta acagcctcag agacccatgg tgcaccgtca cacaaatcaa 1650

catatgcatg atgagagtcc cagaaggaga ggagagaaag ggtcagaaag 1700

aatggccaca agctgatgaa aaacagtaac ctacccactc aggaagctca 1750

gtgaactcca atgaggatga atatcagaga tccacaccta gatatttcat 1800

aatcaaagtg tcaaatgaca aagaatcttg aaagcagcaa gagatgagca 1850

acttatcttg ttcaaaggat ctttgatcag attaacagct catttctcct 1900

cagaaatcat gggagccagg agatagtggg atgaacactg ttgaaggcaa 1950

aaccttcaac tgtaattatt ggacttttga gtcttagatg gtcctgacct 2000

ctttgtcttc aggacagtt tttcaattta atccctaata acaattagtc 2050

aagcttcctt gacctgtagg aaggcctgtc tttaggccgg gcacagtggc 2100

ttacacctgt aatcccagca ctttgggagg cccagacggg tggatcattt 2150

ggggtcaggc tgatctcaaa ctcctgagtt caggtgatct gcccgcctca 2200

gcctcccaaa gtgttgtgat tgcaggcgtg agccactgcg cctggccgga 2250

atttcttttt aaggctgaat gatgggggcc aggcacgatg gctcacgcct 2300

gtgatcccaa gtagcttgga ttgtaaacat gcaccaccat gcctggctaa 2350

ttttttgtatt tttagtagag acgtgttagc caggctggtc tcgatctcct 2400

gacctcaagt gaccacctgc ctcagcctcc caaagtactg ggattacagg 2450

cgtgagccac tgtgcctggc cttgagcatc ttgtgatgtg cttattggcc 2500

atttgtatat cttctatctt ctttggggaa atgtctgttc aagtcctttg 2550

ccttttttaaa tttttattat ttatttattt atttattttg agacagggtc 2600
```

284

```
ttgttctgtt gcccaggctg gagtacagtg gcacagtctt ggctcactgc 2650

agcctcgacc tcctgggctg cagtgatcct cccacctcag cctcccttgt 2700

agctgtattt ttttgtattt tgtattttgt agctgtagtt tttgtatttt 2750

ttgtggagac agcatttcac catgatgccc aggctggtct tgaactcctg 2800

agctcaagtg atctgcctgc ttcagcctcc caaagtgctg ggattacaga 2850

catgagccac tgcacctggc aaactcccaa aattcaacac acacacacaa 2900

aaaaccacct gattcaaaat gggcagaggg gccgggtgtg gccccaacta 2950

ccagggagac tgaagtggga ggatcgcttg ggcatgagaa gtcgaggctg 3000

cagtgagtcg aggttgtgcg actgcattcc agcctggaca acagagtgag 3050

accctgtctc 3060
```

<210> 297
<211> 368
<212> PRT
<213> Homo sapiens

<400> 297

```
Met Gly Leu Leu Ala Phe Leu Lys Thr Gln Phe Val Leu His Leu
 1               5                  10                  15

Leu Val Gly Phe Val Phe Val Val Ser Gly Leu Val Ile Asn Phe
                20                  25                  30

Val Gln Leu Cys Thr Leu Ala Leu Trp Pro Val Ser Lys Gln Leu
                35                  40                  45

Tyr Arg Arg Leu Asn Cys Arg Leu Ala Tyr Ser Leu Trp Ser Gln
                50                  55                  60

Leu Val Met Leu Leu Glu Trp Trp Ser Cys Thr Glu Cys Thr Leu
                65                  70                  75

Phe Thr Asp Gln Ala Thr Val Glu Arg Phe Gly Lys Glu His Ala
                80                  85                  90

Val Ile Ile Leu Asn His Asn Phe Glu Ile Asp Phe Leu Cys Gly
                95                  100                 105

Trp Thr Met Cys Glu Arg Phe Gly Val Leu Gly Ser Ser Lys Val
                110                 115                 120

Leu Ala Lys Lys Glu Leu Leu Tyr Val Pro Leu Ile Gly Trp Thr
                125                 130                 135

Trp Tyr Phe Leu Glu Ile Val Phe Cys Lys Arg Lys Trp Glu Glu
                140                 145                 150

Asp Arg Asp Thr Val Val Glu Gly Leu Arg Arg Leu Ser Asp Tyr
                155                 160                 165
```

```
Pro Glu Tyr Met Trp Phe Leu Leu Tyr Cys Glu Gly Thr Arg Phe
              170             175                     180

Thr Glu Thr Lys His Arg Val Ser Met Glu Val Ala Ala Ala Lys
              185             190                     195

Gly Leu Pro Val Leu Lys Tyr His Leu Leu Pro Arg Thr Lys Gly
              200             205                     210

Phe Thr Thr Ala Val Lys Cys Leu Arg Gly Thr Val Ala Ala Val
              215             220                     225

Tyr Asp Val Thr Leu Asn Phe Arg Gly Asn Lys Asn Pro Ser Leu
              230             235                     240

Leu Gly Ile Leu Tyr Gly Lys Lys Tyr Glu Ala Asp Met Cys Val
              245             250                     255

Arg Arg Phe Pro Leu Glu Asp Ile Pro Leu Asp Glu Lys Glu Ala
              260             265                     270

Ala Gln Trp Leu His Lys Leu Tyr Gln Glu Lys Asp Ala Leu Gln
              275             280                     285

Glu Ile Tyr Asn Gln Lys Gly Met Phe Pro Gly Glu Gln Phe Lys
              290             295                     300

Pro Ala Arg Arg Pro Trp Thr Leu Leu Asn Phe Leu Ser Trp Ala
              305             310                     315

Thr Ile Leu Leu Ser Pro Leu Phe Ser Phe Val Leu Gly Val Phe
              320             325                     330

Ala Ser Gly Ser Pro Leu Leu Ile Leu Thr Phe Leu Gly Phe Val
              335             340                     345

Gly Ala Ala Ser Phe Gly Val Arg Arg Leu Ile Gly Glu Ser Leu
              350             355                     360

Glu Pro Gly Arg Trp Arg Leu Gln
              365
```

<210> 298
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 298
 cttcctctgt gggtggacca tgtg 24

<210> 299
<211> 21
<212> DNA

<210> Artificial

<220>
<221> Artificial Sequence
<222> 1-21
<223> Synthetic construct.

<400> 299
 gccacctcca tgctaacgcg g 21

<210> 300
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45
<223> Synthetic construct.

<400> 300
 ccaaggtcct cgctaagaag gagctgctct acgtgcccct catcg 45

<210> 301
<211> 1334
<212> DNA
<213> Homo sapiens

<400> 301
 gatattcttt attttttaaga atctgaagta ctatgcatca ctccctccaa 50

 tgtcctgggg cagccaccag gcatattcat ctttgtgtgt gtttttcttt 100

 tgctttagca ctggggcact tcttgcttat ttctttggta ggaaaggggc 150

 tcagtttgtc ttgtggggtt ggtggcaggc aggccggctt acgcctgata 200

 cggccctggg ttagaaggga agggaagata aactttttata caaatgggga 250

 tagctggggt ctgagacctg cttcctcagt aaaattcctg ggatctgcct 300

 ataccttctt ttctctaacc tggcataccc tgcttaaagc ctctcagggc 350

 ttctctctgt tcttaggatc aaagtattta gagctacaag agccctcatg 400

 gtctggcccc tgccccccctg gccagcttca ttgtacatgt ggtgttctct 450

 tgtcgttcct gtaatgtggt atgccatggg gtctttgcac aagcctttcc 500

 tctttggctg gacactgttc cctgcccccc ccatactctt cctacttaat 550

 atgtagtcat cctgcagatt tcaattctaa catcattttc tccagggatc 600

 ctggcctgac agaatctcat cttgtttaat gctctcataa gaccacttgt 650

 ttccttttg cagcacttgc cactcagttg tatctttatg tgcgtttgtg 700

 gttgtatggg ttgtgtctgt tccccagaat gcccagctct gagctgcgtg 750

```
agggtcaagg gcattgctgt gcctgccagg tatagtgcct acatgtggtg 800

ggtgctcatg ttttagagac taaatggagg aggagatgag gaaaagattg 850

aaatctctca gttcaccaga tggtgtaggg cccagcattg taaattcaca 900

cgttgactgt gcttgtgaat tatctgggga tgcaggtcct gattcagtag 950

gcccaggttg ggcatctcta acaaactccc acgtgatgct gatgctggtc 1000

ctatgaacta tactaaatag taagaatcta tggagccagg ctgggcatgg 1050

tggctcacac ctatgatccc agcactttgg gaggctgagg caggctgatc 1100

acctggagtc aggatttcaa gactagcctg gccaacatgg tggaacccca 1150

tctgtactaa aaatacacaa attagctggg catggtggca catgcctgta 1200

gtcccagcta cttgggaggc tgaagcaaga gaatcgcttg aacctgggag 1250

gcggaggttg cagtgagccg agatcaggcc actgtattcc aaccaggtg 1300

acagagtgag actctatgtc caaaaaaaaa aaaa 1334
```

<210> 302
<211> 143
<212> PRT
<213> Homo sapiens

<400> 302

```
Met His His Ser Leu Gln Cys Pro Gly Ala Ala Thr Arg His Ile
  1           5               10                  15

His Leu Cys Val Cys Phe Ser Phe Ala Leu Ala Leu Gly His Phe
                 20              25                  30

Leu Leu Ile Ser Leu Val Gly Lys Gly Leu Ser Leu Ser Cys Gly
                 35              40                  45

Val Gly Gly Arg Gln Ala Gly Leu Arg Leu Ile Arg Pro Trp Val
                 50              55                  60

Arg Arg Glu Gly Lys Ile Asn Phe Tyr Thr Asn Gly Asp Ser Trp
                 65              70                  75

Gly Leu Arg Pro Ala Ser Ser Val Lys Phe Leu Gly Ser Ala Tyr
                 80              85                  90

Thr Phe Phe Ser Leu Thr Trp His Thr Leu Leu Lys Ala Ser Gln
                 95              100                 105

Gly Phe Ser Leu Phe Leu Gly Ser Lys Tyr Leu Glu Leu Gln Glu
                 110             115                 120

Pro Ser Trp Ser Gly Pro Cys Pro Pro Gly Gln Leu His Cys Thr
                 125             130                 135

Cys Gly Val Leu Leu Ser Phe Leu
```

<210> 303
<211> 1768
<212> DNA
<213> Homo sapiens

<400> 303
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ggctggactg gaactcctgg tcccaagtga tccacccgcc tcagcctccc   50

aaggtgctgt gattataggt gtaagccacc gtgtctggcc tctgaacaac  100

tttttcagca actaaaaaag ccacaggagt tgaactgcta ggattctgac  150

tatgctgtgg tggctagtgc tcctactcct acctacatta aaatctgttt  200

tttgttctct tgtaactagc ctttaccttc ctaacacaga ggatctgtca  250

ctgtggctct ggcccaaacc tgaccttcac tctggaacga aacagaggt  300

ttctacccac accgtccct cgaagccggg gacagcctca ccttgctggc  350

ctctcgctgg agcagtgccc tcaccaactg tctcacgtct ggaggcactg  400

actcgggcag tgcaggtagc tgagcctctt ggtagctgcg gctttcaagg  450

tgggccttgc cctggccgta gaagggattg acaagcccga agatttcata  500

ggcgatggct cccactgccc aggcatcagc cttgctgtag tcaatcactg  550

ccctgggggcc aggacgggcc gtggacacct gctcagaagc agtgggtgag  600

acatcacgct gcccgcccat ctaacctttt catgtcctgc acatcacctg  650

atccatgggc taatctgaac tctgtcccaa ggaacccaga gcttgagtga  700

gctgtggctc agacccagaa ggggtctgct tagaccacct ggtttatgtg  750

acaggacttg cattctcctg gaacatgagg gaacgccgga ggaaagcaaa  800

gtggcaggga aggaacttgt gccaaattat gggtcagaaa agatggaggt  850

gttgggttat cacaaggcat cgagtctcct gcattcagtg gacatgtggg  900

ggaagggctg ccgatggcgc atgacacact cgggactcac ctctggggcc  950

atcagacagc cgtttccgcc ccgatccacg taccagctgc tgaagggcaa 1000

ctgcaggccg atgctctcat cagccaggca gcagccaaaa tctgcgatca 1050

ccagccaggg gcagccgtct gggaaggagc aagcaaagtg accatttctc 1100

ctccctcct tccctctgag aggccctcct atgtccctac taaagccacc 1150

agcaagacat agctgacagg ggctaatggc tcagtgttgg cccaggaggt 1200

cagcaaggcc tgagagctga tcagaagggc ctgctgtgcg aacacggaaa 1250
```

```
tgcctccagt aagcacaggc tgcaaaatcc ccaggcaaag gactgtgtgg 1300

ctcaatttaa atcatgttct agtaattgga gctgtcccca agaccaaagg 1350

agctagagct tggttcaaat gatctccaag ggcccttata ccccaggaga 1400

ctttgatttg aatttgaaac cccaaatcca aacctaagaa ccaggtgcat 1450

taagaatcag ttattgccgg gtgtggtggc ctgtaatgcc aacattttgg 1500

gaggccgagg cgggtagatc acctgaggtc aggagttcaa gaccagcctg 1550

gccaacatgg tgaaacccct gtctctacta aaaatacaaa aaaactagcc 1600

aggcatggtg gtgtgtgcct gtatcccagc tactcgggag gctgagacag 1650

gagaattact tgaacctggg aggtgaagga ggctgagaca ggagaatcac 1700

ttcagcctga gcaacacagc gagactctgt ctcagaaaaa ataaaaaaag 1750

aattatggtt atttgtaa 1768
```

<210> 304
<211> 109
<212> PRT
<213> Homo sapiens

<400> 304

```
Met Leu Trp Trp Leu Val Leu Leu Leu Pro Thr Leu Lys Ser
 1               5                  10                  15

Val Phe Cys Ser Leu Val Thr Ser Leu Tyr Leu Pro Asn Thr Glu
                20                  25                  30

Asp Leu Ser Leu Trp Leu Trp Pro Lys Pro Asp Leu His Ser Gly
                35                  40                  45

Thr Arg Thr Glu Val Ser Thr His Thr Val Pro Ser Lys Pro Gly
                50                  55                  60

Thr Ala Ser Pro Cys Trp Pro Leu Ala Gly Ala Val Pro Ser Pro
                65            .     70                  75

Thr Val Ser Arg Leu Glu Ala Leu Thr Arg Ala Val Gln Val Ala
                80                  85                  90

Glu Pro Leu Gly Ser Cys Gly Phe Gln Gly Gly Pro Cys Pro Gly
                95                 100                 105

Arg Arg Arg Asp
```

<210> 305
<211> 989
<212> DNA
<213> Homo sapiens

<400> 305

```
gcgggcccgc gagtccgaga cctgtcccag gagctccagc tcacgtgacc  50

tgtcactgcc tcccgccgcc tcctgcccgc gccatgaccc agccggtgcc  100

ccggctctcc gtgcccgccg cgctggccct gggctcagcc gcactgggcg  150

ccgccttcgc cactggcctc ttcctgggga ggcggtgccc cccatggcga  200

ggccggcgag agcagtgcct gcttcccccc gaggacagcc gcctgtggca  250

gtatcttctg agccgctcca tgcgggagca cccggcgctg cgaagcctga  300

ggctgctgac cctggagcag ccgcaggggg attctatgat gacctgcgag  350

caggcccagc tcttggccaa cctggcgcgg ctcatccagg ccaagaaggc  400

gctggacctg ggcaccttca cgggctactc cgccctggcc ctggccctgg  450

cgctgcccgc ggacgggcgc gtggtgacct gcgaggtgga cgcgcagccc  500

ccggagctgg acggcccct gtggaggcag gccgaggcgg agcacaagat  550

cgacctccgg ctgaagcccg ccttggagac cctggacgag ctgctggcgg  600

cgggcgaggc cggcaccttc gacgtggccg tggtggatgc ggacaaggag  650

aactgctccg cctactacga gcgctgcctg cagctgctgc acccggagg  700

catcctcgcc gtcctcagag tcctgtggcg cgggaaggtg ctgcaacctc  750

cgaaagggga cgtggcggcc gagtgtgtgc gaaacctaaa cgaacgcatc  800

cggcgggacg tcagggtcta catcagcctc ctgcccctgg gcgatggact  850

caccttggcc ttcaagatct agggctggcc cctagtgagt gggctcgagg  900

gagggttgcc tgggaacccc aggaattgac cctgagtttt aaattcgaaa  950

ataaagtggg gctgggacac aaaaaaaaaa aaaaaaaaa  989
```

<210> 306
<211> 262
<212> PRT
<213> Homo sapiens

<400> 306

```
Met Thr Gln Pro Val Pro Arg Leu Ser Val Pro Ala Ala Leu Ala
 1               5                  10                  15

Leu Gly Ser Ala Ala Leu Gly Ala Ala Phe Ala Thr Gly Leu Phe
                20                  25                  30

Leu Gly Arg Arg Cys Pro Pro Trp Arg Gly Arg Arg Glu Gln Cys
                35                  40                  45

Leu Leu Pro Pro Glu Asp Ser Arg Leu Trp Gln Tyr Leu Leu Ser
                50                  55                  60
```

291

```
Arg Ser Met Arg Glu His Pro Ala Leu Arg Ser Leu Arg Leu Leu
                65              70                      75

Thr Leu Glu Gln Pro Gln Gly Asp Ser Met Met Thr Cys Glu Gln
                80              85                      90

Ala Gln Leu Leu Ala Asn Leu Ala Arg Leu Ile Gln Ala Lys Lys
                95              100                     105

Ala Leu Asp Leu Gly Thr Phe Thr Gly Tyr Ser Ala Leu Ala Leu
                110             115                     120

Ala Leu Ala Leu Pro Ala Asp Gly Arg Val Val Thr Cys Glu Val
                125             130                     135

Asp Ala Gln Pro Pro Glu Leu Gly Arg Pro Leu Trp Arg Gln Ala
                140             145                     150

Glu Ala Glu His Lys Ile Asp Leu Arg Leu Lys Pro Ala Leu Glu
                155             160                     165

Thr Leu Asp Glu Leu Leu Ala Ala Gly Glu Ala Gly Thr Phe Asp
                170             175                     180

Val Ala Val Val Asp Ala Asp Lys Glu Asn Cys Ser Ala Tyr Tyr
                185             190                     195

Glu Arg Cys Leu Gln Leu Leu Arg Pro Gly Gly Ile Leu Ala Val
                200             205                     210

Leu Arg Val Leu Trp Arg Gly Lys Val Leu Gln Pro Pro Lys Gly
                215             220                     225

Asp Val Ala Ala Glu Cys Val Arg Asn Leu Asn Glu Arg Ile Arg
                230             235                     240

Arg Asp Val Arg Val Tyr Ile Ser Leu Leu Pro Leu Gly Asp Gly
                245             250                     255

Leu Thr Leu Ala Phe Lys Ile
                260
```

<210> 307
<211> 2272
<212> DNA
<213> Homo sapiens

<400> 307
```
ccgccgccgc agccgctacc gccgctgcag ccgctttccg cggcctgggc 50

ctctcgccgt cagcatgcca cacgccttca gcccggggga cttggtgttc 100

gctaagatga agggctaccc tcactggcct gccaggatcg acgacatcgc 150

ggatggcgcc gtgaagcccc cacccaacaa gtaccccatc tttttctttg 200

gcacacacga aacagccttc ctgggaccca aggacctgtt cccctacgac 250
```

292

```
aaatgtaaag acaagtacgg gaagcccaac aagaggaaag gcttcaatga 300

agggctgtgg gagatccaga acaaccccca cgccagctac agcgcccctc 350

cgccagtgag ctcctccgac agcgaggccc ccgaggccaa ccccgccgac 400

ggcagtgacg ctgacgagga cgatgaggac cgggggggtca tggccgtcac 450

agcggtaacc gccacagctg ccagcgacag gatggagagc gactcagact 500

cagacaagag tagcgacaac agtggcctga agaggaagac gcctgcgcta 550

aagatgtcgg tctcgaaacg agcccgaaag gcctccagcg acctggatca 600

ggccagcgtg tccccatccg aagaggagaa ctcggaaagc tcatctgagt 650

cggagaagac cagcgaccag gacttcacac ctgagaagaa agcagcggtc 700

cgggcgccac ggaggggccc tctgggggga cggaaaaaaa agaaggcgcc 750

gtcagcctcc gactccgact ccaaggccga ttcggacggg gccaagcctg 800

agccggtggc catggcgcgg tcggcgtcct cctcctcctc ttcctcctcc 850

tcctccgact ccgatgtgtc tgtgaagaag cctccgaggg gcaggaagcc 900

agcggagaag cctctcccga agccgcgagg gcggaaaccg aagcctgaac 950

ggcctccgtc cagctccagc agtgacagtg acagcgacga ggtggaccgc 1000

atcagtgagt ggaagcggcg ggacgaggcg cggaggcgcg agctggaggc 1050

ccggcggcgg cgagagcagg aggaggagct gcggcgcctg cgggagcagg 1100

agaaggagga gaaggagcgg aggcgcgagc gggccgaccg cggggaggct 1150

gagcggggca gcggcggcag cagcggggac gagctcaggg aggacgatga 1200

gcccgtcaag aagcggggac gcaagggccg gggccggggt ccccgtcct 1250

cctctgactc cgagcccgag gccgagctgg agagagaggc caagaaatca 1300

gcgaagaagc cgcagtcctc aagcacagag cccgccagga aacctggcca 1350

gaaggagaag agagtgcggc ccgaggagaa gcaacaagcc aagcccgtga 1400

aggtggagcg gacccggaag cggtccgagg gcttctcgat ggacaggaag 1450

gtagagaaga agaaagagcc ctccgtggag gagaagctgc agaagctgca 1500

cagtgagatc aagtttgccc taaaggtcga cagcccggac gtgaagaggt 1550

gcctgaatgc cctagaggag ctgggaaccc tgcaggtgac ctctcagatc 1600

ctccagaaga acacagacgt ggtggccacc ttgaagaaga ttcgccgtta 1650

caaagcgaac aaggacgtaa tggagaaggc agcagaagtc tatacccggc 1700
```

293

```
tcaagtcgcg ggtcctcggc ccaaagatcg aggcggtgca gaaagtgaac 1750

aaggctggga tggagaagga gaaggccgag gagaagctgg ccggggagga 1800

gctggccggg gaggaggccc cccaggagaa ggcggaggac aagcccagca 1850

ccgatctctc agccccagtg aatggcgagg ccacatcaca gaaggggag 1900

agcgcagagg acaaggagca cgaggagggt cgggactcgg aggaggggcc 1950

aaggtgtggc tcctctgaag acctgcacga cagcgtacgg gagggtcccg 2000

acctggacag gcctgggagc gaccggcagg agcgcgagag ggcacggggg 2050

gactcggagg ccctggacga ggagagctga ccgcgggca gccaggccca 2100

gcccccgccc gagctcaggc tgcccctctc cttccccggc tcgcaggaga 2150

gcagagcaga gaactgtggg gaacgctgtg ctgtttgtat ttgttccctt 2200

gggttttttt ttcctgccta atttctgtga tttccaacca acatgaaatg 2250

actataaacg gttttttaat ga 2272
```

<210> 308
<211> 671
<212> PRT
<213> Homo sapiens

<400> 308

```
Met Pro His Ala Phe Lys Pro Gly Asp Leu Val Phe Ala Lys Met
 1               5                  10                  15

Lys Gly Tyr Pro His Trp Pro Ala Arg Ile Asp Asp Ile Ala Asp
                20                  25                  30

Gly Ala Val Lys Pro Pro Pro Asn Lys Tyr Pro Ile Phe Phe Phe
                35                  40                  45

Gly Thr His Glu Thr Ala Phe Leu Gly Pro Lys Asp Leu Phe Pro
                50                  55                  60

Tyr Asp Lys Cys Lys Asp Lys Tyr Gly Lys Pro Asn Lys Arg Lys
                65                  70                  75

Gly Phe Asn Glu Gly Leu Trp Glu Ile Gln Asn Asn Pro His Ala
                80                  85                  90

Ser Tyr Ser Ala Pro Pro Pro Val Ser Ser Asp Ser Glu Ala
                95                  100                 105

Pro Glu Ala Asn Pro Ala Asp Gly Ser Asp Ala Asp Glu Asp Asp
                110                 115                 120

Glu Asp Arg Gly Val Met Ala Val Thr Ala Val Thr Ala Thr Ala
                125                 130                 135

Ala Ser Asp Arg Met Glu Ser Asp Ser Asp Ser Asp Lys Ser Ser
```

294

```
               140                    145                    150
Asp Asn Ser Gly Leu Lys Arg Lys Thr Pro Ala Leu Lys Met Ser
               155                    160                    165
Val Ser Lys Arg Ala Arg Lys Ala Ser Ser Asp Leu Asp Gln Ala
               170                    175                    180
Ser Val Ser Pro Ser Glu Glu Glu Asn Ser Glu Ser Ser Ser Glu
               185                    190                    195
Ser Glu Lys Thr Ser Asp Gln Asp Phe Thr Pro Glu Lys Lys Ala
               200                    205                    210
Ala Val Arg Ala Pro Arg Arg Gly Pro Leu Gly Gly Arg Lys Lys
               215                    220                    225
Lys Lys Ala Pro Ser Ala Ser Asp Ser Asp Ser Lys Ala Asp Ser
               230                    235                    240
Asp Gly Ala Lys Pro Glu Pro Val Ala Met Ala Arg Ser Ala Ser
               245                    250                    255
Ser Ser Ser Ser Ser Ser Ser Ser Ser Asp Ser Asp Val Ser Val
               260                    265                    270
Lys Lys Pro Pro Arg Gly Arg Lys Pro Ala Glu Lys Pro Leu Pro
               275                    280                    285
Lys Pro Arg Gly Arg Lys Pro Lys Pro Glu Arg Pro Pro Ser Ser
               290                    295                    300
Ser Ser Ser Asp Ser Asp Ser Asp Glu Val Asp Arg Ile Ser Glu
               305                    310                    315
Trp Lys Arg Arg Asp Glu Ala Arg Arg Arg Glu Leu Glu Ala Arg
               320                    325                    330
Arg Arg Arg Glu Gln Glu Glu Glu Leu Arg Arg Leu Arg Glu Gln
               335                    340                    345
Glu Lys Glu Glu Lys Glu Arg Arg Arg Glu Arg Ala Asp Arg Gly
               350                    355                    360
Glu Ala Glu Arg Gly Ser Gly Gly Ser Ser Gly Asp Glu Leu Arg
               365                    370                    375
Glu Asp Asp Glu Pro Val Lys Lys Arg Gly Arg Lys Gly Arg Gly
               380                    385                    390
Arg Gly Pro Pro Ser Ser Ser Asp Ser Glu Pro Glu Ala Glu Leu
               395                    400                    405
Glu Arg Glu Ala Lys Lys Ser Ala Lys Lys Pro Gln Ser Ser Ser
               410                    415                    420
Thr Glu Pro Ala Arg Lys Pro Gly Gln Lys Glu Lys Arg Val Arg
               425                    430                    435
```

295

```
Pro Glu Glu Lys Gln Gln Ala Lys Pro Val Lys Val Glu Arg Thr
              440               445               450

Arg Lys Arg Ser.Glu Gly Phe Ser Met Asp Arg Lys Val Glu Lys
              455               460               465

Lys Lys Glu Pro Ser Val Glu Glu Lys Leu Gln Lys Leu His Ser
              470               475               480

Glu Ile Lys Phe Ala Leu Lys Val Asp Ser Pro Asp Val Lys Arg
              485               490               495

Cys Leu Asn Ala Leu Glu Glu Leu Gly Thr Leu Gln Val Thr Ser
              500               505               510

Gln Ile Leu Gln Lys Asn Thr Asp Val Val Ala Thr Leu Lys Lys
              515               520               525

Ile Arg Arg Tyr Lys Ala Asn Lys Asp Val Met Glu Lys Ala Ala
              530               535               540

Glu Val Tyr Thr Arg Leu Lys Ser Arg Val Leu Gly Pro Lys Ile
              545               550               555

Glu Ala Val Gln Lys Val Asn Lys Ala Gly Met Glu Lys Glu Lys
              560               565               570

Ala Glu Glu Lys Leu Ala Gly Glu Glu Leu Ala Gly Glu Glu Ala
              575               580               585

Pro Gln Glu Lys Ala Glu Asp Lys Pro Ser Thr Asp Leu Ser Ala
              590               595               600

Pro Val Asn Gly Glu Ala Thr Ser Gln Lys Gly Glu Ser Ala Glu
              605               610               615

Asp Lys Glu His Glu Glu Gly Arg Asp Ser Glu Glu Gly Pro Arg
              620               625               630

Cys Gly Ser Ser Glu Asp Leu His Asp Ser Val Arg Glu Gly Pro
              635               640               645

Asp Leu Asp Arg Pro Gly Ser Asp Arg Gln Glu Arg Glu Arg Ala
              650               655               660

Arg Gly Asp Ser Glu Ala Leu Asp Glu Glu Ser
              665               670
```

<210> 309
<211> 3871
<212> DNA
<213> Homo sapiens

<400> 309
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gttggttctc ctggatcttc accttaccaa ctgcagatct tgggactcat 50

cagcctcaat aattatatta aattaacacc atttgaaaga gaacattgtt 100
```

```
ttcatcatga atgctaataa agatgaaaga cttaaagcca gaagccaaga 150

ttttcacctt tttcctgctt tgatgatgct aagcatgacc atgttgtttc 200

ttccagtcac tggcactttg aagcaaaata ttccaagact caagctaacc 250

tacaaagact tgctgctttc aaatagctgt attccctttt tgggttcatc 300

agaaggactg gattttcaaa ctcttctctt agatgaggaa agaggcaggc 350

tgctcttggg agccaaagac cacatctttc tactcagtct ggttgactta 400

aacaaaaatt ttaagaagat ttattggcct gctgcaaagg aacgggtgga 450

attatgtaaa ttagctggga aagatgccaa tacagaatgt gcaaatttca 500

tcagagtact tcagccctat aacaaaactc acatatatgt gtgtggaact 550

ggagcatttc atccaatatg tgggtatatt gatcttggag tctacaagga 600

ggatattata ttcaaactag acacacataa tttggagtct ggcagactga 650

aatgtccttt cgatcctcag cagccttttg cttcagtaat gacagatgag 700

tacctctact ctggaacagc ttctgatttc cttggcaaag atactgcatt 750

cactcgatcc cttgggccta ctcatgacca ccactacatc agaactgaca 800

tttcagagca ctactggctc aatggagcaa aatttattgg aactttcttc 850

ataccagaca cctacaatcc agatgatgat aaaatatatt tcttctttcg 900

tgaatcatct caagaaggca gtacctccga taaaaccatc ctttctcgag 950

ttggaagagt ttgtaagaat gatgtaggag gacaacgcag cctgataaac 1000

aagtggacga ctttttcttaa ggccagactg atttgctcaa ttcctggaag 1050

tgatggggca gatacttact ttgatgagct tcaagatatt tatttactcc 1100

ccacaagaga tgaaagaaat cctgtagtat atggagtctt tactacaacc 1150

agctccatct tcaaaggctc tgctgtttgt gtgtatagca tggctgacat 1200

cagagcagtt tttaatggtc catatgctca taggaaaagt gcagaccatc 1250

gttgggtgca gtatgatggg agaattcctt atccacggcc tggtacatgt 1300

ccaagcaaaa cctatgaccc actgattaag tccacccgag attttccaga 1350

tgatgtcatc agtttcataa agcggcactc tgtgatgtat aagtccgtat 1400

acccagttgc aggaggacca acgttcaaga gaatcaatgt ggattacaga 1450

ctgacacaga tagtggtgga tcatgtcatt gcagaagatg gccagtacga 1500

tgtaatgttt cttggaacag acattggaac tgtcctcaaa gttgtcagca 1550
```

297

```
tttcaaagga aaagtggaat atggaagagg tagtgctgga ggagttgcag 1600

atattcaagc actcatcaat catcttgaac atggaattgt ctctgaagca 1650

gcaacaattg tacattggtt cccgagatgg attagttcag ctctccttgc 1700

acagatgcga cacttatggg aaagcttgcg cagactgttg tcttgccaga 1750

gacccctact gtgcctggga tggaaatgca tgctctcgat atgctcctac 1800

ttctaaaagg agagctagac gccaagatgt aaaatatggc gacccaatca 1850

cccagtgctg ggacatcgaa gacagcatta gtcatgaaac tgctgatgaa 1900

aaggtgattt ttggcattga atttaactca acctttctgg aatgtatacc 1950

taaatcccaa caagcaacta ttaaatggta tatccagagg tcaggggatg 2000

agcatcgaga ggagttgaag cccgatgaaa gaatcatcaa aacggaatat 2050

gggctactga ttcgaagttt gcagaagaag gattctggga tgtattactg 2100

caaagcccag gagcacactt tcatccacac catagtgaag ctgactttga 2150

atgtcattga gaatgaacag atggaaaata cccagagggc agagcatgag 2200

gaggggcagg tcaaggatct attggctgag tcacggttga gatacaaaga 2250

ctacatccaa atccttagca gcccaaactt cagcctcgac cagtactgcg 2300

aacagatgtg gcacagggag aagcggagac agagaaacaa ggggggccca 2350

aagtggaagc acatgcagga aatgaagaag aaacgaaatc gaagacatca 2400

cagagacctg gatgagctcc ctagagctgt agccacgtag ttttctactt 2450

aatttaaaga aaagaattcc ttacctataa aaacattgcc ttctgttttg 2500

tatatccctt atagtaattc ataaatgctt cccatggagt tttgctaagg 2550

cacaagacaa taatctgaat aagacaatat gtgatgaata taagaaaggg 2600

caaaaaattc atttgaacca gttttccaag aacaaatctt gcacaagcaa 2650

agtataagaa ttatcctaaa aatagggggt ttacagttgt aaatgtttta 2700

tgttttgagt tttggaattt attgtcatgt aaatagttga gctaagcaag 2750

ccccgaattt gatagtgtat aaggtgcttt attccctcga atgtccatta 2800

agcatggaat ttaccatgca gttgtgctat gttcttatga acagatatat 2850

cattcctatt gagaaccagc taccttgtgg tagggaataa gaggtcagac 2900

acaaattaag acaactccca ttatcaacag gaactttctc agtgagccat 2950

tcactcctgg agaatggtat aggaatttgg agaggtgcat tatttctttc 3000
```

298

tggccactgg ggttaaattt agtgtactac aacattgatt tactgaaggg 3050

cactaatgtt tcccccagga tttctattga ctagtcagga gtaacaggtt 3100

cacagagaga agttggtgct tagttatgtg ttttttagag tatatactaa 3150

gctctacagg gacagaatgc ttaataaata ctttaataag atatgggaaa 3200

atattttaat aaaacaagga aaacataatg atgtataatg catcctgatg 3250

ggaaggcatg cagatgggat ttgttagaag acagaaggaa agacagccat 3300

aaattctggc tttggggaaa actcatatcc ccatgaaaag gaagaacaat 3350

cacaaataaa gtgagagtaa tgtaatggag ctcttttcac tagggtataa 3400

gtagctgcca atttgtaatt catctgttaa aaaaaatcta gattataaca 3450

aactgctagc aaaatctgag gaaacataaa ttcttctgaa gaatcatagg 3500

aagagtagac attttatttta taaccaatga tatttcagta tatattttct 3550

ctcttttaaa aaatatttat catactctgt atattatttc tttttactgc 3600

ctttattctc tcctgtatat tggattttgt gattatattt gagtgaatag 3650

gagaaaacaa tatataacac acagagaatt aagaaaatga catttctggg 3700

gagtggggat atatatttgt tgaataacag aacgagtgta aaattttaac 3750

aacggaaagg gttaaattaa ctctttgaca tcttcactca acctttctc 3800

attgctgagt taatctgttg taattgtagt attgtttttg taatttaaca 3850

ataaataagc ctgctacatg t 3871

<210> 310
<211> 777
<212> PRT
<213> Homo sapiens

<400> 310

Met	Asn	Ala	Asn	Lys	Asp	Glu	Arg	Leu	Lys	Ala	Arg	Ser	Gln	Asp
1				5				10						15

Phe	His	Leu	Phe	Pro	Ala	Leu	Met	Met	Leu	Ser	Met	Thr	Met	Leu
				20				25						30

Phe	Leu	Pro	Val	Thr	Gly	Thr	Leu	Lys	Gln	Asn	Ile	Pro	Arg	Leu
				35				40						45

Lys	Leu	Thr	Tyr	Lys	Asp	Leu	Leu	Leu	Ser	Asn	Ser	Cys	Ile	Pro
				50				55						60

Phe	Leu	Gly	Ser	Ser	Glu	Gly	Leu	Asp	Phe	Gln	Thr	Leu	Leu	Leu
				65				70						75

Asp	Glu	Glu	Arg	Gly	Arg	Leu	Leu	Leu	Gly	Ala	Lys	Asp	His	Ile

```
                80                      85                      90
Phe Leu Leu Ser Leu Val Asp Leu Asn Lys Asn Phe Lys Lys Ile
                95                     100                     105

Tyr Trp Pro Ala Ala Lys Glu Arg Val Glu Leu Cys Lys Leu Ala
               110                     115                     120

Gly Lys Asp Ala Asn Thr Glu Cys Ala Asn Phe Ile Arg Val Leu
               125                     130                     135

Gln Pro Tyr Asn Lys Thr His Ile Tyr Val Cys Gly Thr Gly Ala
               140                     145                     150

Phe His Pro Ile Cys Gly Tyr Ile Asp Leu Gly Val Tyr Lys Glu
               155                     160                     165

Asp Ile Ile Phe Lys Leu Asp Thr His Asn Leu Glu Ser Gly Arg
               170                     175                     180

Leu Lys Cys Pro Phe Asp Pro Gln Gln Pro Phe Ala Ser Val Met
               185                     190                     195

Thr Asp Glu Tyr Leu Tyr Ser Gly Thr Ala Ser Asp Phe Leu Gly
               200                     205                     210

Lys Asp Thr Ala Phe Thr Arg Ser Leu Gly Pro Thr His Asp His
               215                     220                     225

His Tyr Ile Arg Thr Asp Ile Ser Glu His Tyr Trp Leu Asn Gly
               230                     235                     240

Ala Lys Phe Ile Gly Thr Phe Phe Ile Pro Asp Thr Tyr Asn Pro
               245                     250                     255

Asp Asp Asp Lys Ile Tyr Phe Phe Phe Arg Glu Ser Ser Gln Glu
               260                     265                     270

Gly Ser Thr Ser Asp Lys Thr Ile Leu Ser Arg Val Gly Arg Val
               275                     280                     285

Cys Lys Asn Asp Val Gly Gly Gln Arg Ser Leu Ile Asn Lys Trp
               290                     295                     300

Thr Thr Phe Leu Lys Ala Arg Leu Ile Cys Ser Ile Pro Gly Ser
               305                     310                     315

Asp Gly Ala Asp Thr Tyr Phe Asp Glu Leu Gln Asp Ile Tyr Leu
               320                     325                     330

Leu Pro Thr Arg Asp Glu Arg Asn Pro Val Val Tyr Gly Val Phe
               335                     340                     345

Thr Thr Thr Ser Ser Ile Phe Lys Gly Ser Ala Val Cys Val Tyr
               350                     355                     360

Ser Met Ala Asp Ile Arg Ala Val Phe Asn Gly Pro Tyr Ala His
               365                     370                     375
```

```
Lys Glu Ser Ala Asp His Arg Trp Val Gln Tyr Asp Gly Arg Ile
            380                 385                 390

Pro Tyr Pro Arg Pro Gly Thr Cys Pro Ser Lys Thr Tyr Asp Pro
            395                 400                 405

Leu Ile Lys Ser Thr Arg Asp Phe Pro Asp Asp Val Ile Ser Phe
            410                 415                 420

Ile Lys Arg His Ser Val Met Tyr Lys Ser Val Tyr Pro Val Ala
            425                 430                 435

Gly Gly Pro Thr Phe Lys Arg Ile Asn Val Asp Tyr Arg Leu Thr
            440                 445                 450

Gln Ile Val Val Asp His Val Ile Ala Glu Asp Gly Gln Tyr Asp
            455                 460                 465

Val Met Phe Leu Gly Thr Asp Ile Gly Thr Val Leu Lys Val Val
            470                 475                 480

Ser Ile Ser Lys Glu Lys Trp Asn Met Glu Glu Val Val Leu Glu
            485                 490·                495

Glu Leu Gln Ile Phe Lys His Ser Ser Ile Ile Leu Asn Met Glu
            500                 505                 510

Leu Ser Leu Lys Gln Gln Gln Leu Tyr Ile Gly Ser Arg Asp Gly
            515                 520                 525

Leu Val Gln Leu Ser Leu His Arg Cys Asp Thr Tyr Gly Lys Ala
            530                 535                 540

Cys Ala Asp Cys Cys Leu Ala Arg Asp Pro Tyr Cys Ala Trp Asp
            545                 550                 555

Gly Asn Ala Cys Ser Arg Tyr Ala Pro Thr Ser Lys Arg Arg Ala
            560                 565                 570

Arg Arg Gln Asp Val Lys Tyr Gly Asp Pro Ile Thr Gln Cys Trp
            575                 580                 585

Asp Ile Glu Asp Ser Ile Ser His Glu Thr Ala Asp Glu Lys Val
            590                 595                 600

Ile Phe Gly Ile Glu Phe Asn Ser Thr Phe Leu Glu Cys Ile Pro
            605                 610                 615

Lys Ser Gln Gln Ala Thr Ile Lys Trp Tyr Ile Gln Arg Ser Gly
            620                 625                 630

Asp Glu His Arg Glu Glu Leu Lys Pro Asp Glu Arg Ile Ile Lys
            635                 640                 645

Thr Glu Tyr Gly Leu Leu Ile Arg Ser Leu Gln Lys Lys Asp Ser
            650                 655                 660

Gly Met Tyr Tyr Cys Lys Ala Gln Glu His Thr Phe Ile His Thr
```

301

```
Ile Val Lys Leu Thr Leu Asn Val Ile Glu Asn Glu Gln Met Glu
            680                  685                  690

Asn Thr Gln Arg Ala Glu His Glu Glu Gly Gln Val Lys Asp Leu
            695                  700                  705

Leu Ala Glu Ser Arg Leu Arg Tyr Lys Asp Tyr Ile Gln Ile Leu
            710                  715                  720

Ser Ser Pro Asn Phe Ser Leu Asp Gln Tyr Cys Glu Gln Met Trp
            725                  730                  735

His Arg Glu Lys Arg Arg Gln Arg Asn Lys Gly Gly Pro Lys Trp
            740                  745                  750

Lys His Met Gln Glu Met Lys Lys Lys Arg Asn Arg Arg His His
            755                  760                  765

Arg Asp Leu Asp Glu Leu Pro Arg Ala Val Ala Thr
            770                  775
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<210> 311
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-25
<223> Synthetic construct.

<400> 311
 caacgcagcc gtgataaaca agtgg 25

<210> 312
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 312
 gcttggacat gtaccaggcc gtgg 24

<210> 313
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45
<223> Synthetic construct.

<400> 313
ggccagactg atttgctcaa ttcctggaag tgatggggca gatac 45

<210> 314
<211> 3934
<212> DNA
<213> Homo sapiens

<400> 314
ccctgacctc cctgagccac actgagctgg aagccgcaga ggtcatcctg 50

gagcatgccc accgcgggga gcagacaacc tcccaggtaa gctgggagca 100

agacctgaag ctgtttcttc aggagcctgg tgtattttcc cccaccccac 150

ctcagcagtt tcagccagca gggactgatc aggtgtgtgt cctggagtgg 200

ggagcagaag gcgtggctgg caagagtggc ctggagaaag aggttcagcg 250

cttgaccagc cgagctgccc gtgactacaa gatccagaac catgggcatc 300

gggtgaggtg gggggcaca ggtgtcatgt gcaccttctt gtctcagcaa 350

gaagagctga gagaggggat cttggagcca ttgagggtgt catggagcta 400

cagaggggag ggaaaggtat tttaaggtaa cagtgtggca caatagttaa 450

gagcacagtt tttggagcta gaccgacata ggttcaaatt ctcttctgtt 500

gcttcctagt tctgtagccc caggtaaggg agtgacttaa cctctctgga 550

cttcaatttc ctcatcacta aagtagggcc aataatagca cccacctcat 600

agggaagatt aaatgacata atgtatgtga tgcaactagc aaagtaccag 650

tcccatagta agtcatgccc cacagtattt ccacccaccc ctgttctctg 700

ccttcccaac caggtactgc aacgactgga gcagaggcgg cagcaggctt 750

cagagcggga ggctccaagc atagaacaga ggttacagga agtgcgagag 800

agcatccgcc gggcacaggt gagccaggtg aaggggctg cccggctggc 850

cctgctgcag ggggctggct tagatgtgga gcgctggctg aagccagcca 900

tgacccaggc ccaggatgag gtggagcagg agcggcggct cagtgaggct 950

cggctgtccc agagggacct ctctccaacc gctgaggatg ctgagctttc 1000

tgactttgag gaatgtgagg agacgggaga gctctttgag gagcctgccc 1050

cccaagccct ggccacgagg gccctcccct gcctgcaca cgtggtattt 1100

cgctatcagg cagggcgtga ggatgagctg acaatcacgg agggtgagtg 1150

gctggaggtc atagaggagg gagatgctga cgaatgggtc aaggctcgga 1200

accagcacgg cgaggtaggc tttgtccctg agcgatatct caacttcccg 1250

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gacctctccc tcccagagag cagccaagac agtgacaatc cctgcggggc 1300

agagcccaca gcattcctgg cacaggccct gtacagctac accggacaga 1350

gtgcagagga gctgagcttc cctgaggggg cactcatccg tctgctgccc 1400

cgggcccaag atggagtaga tgacggcttc tggaggggag aatttggggg 1450

ccgtgttggg gtcttcccct ccctgctggt ggaagagctg cttggccccc 1500

cagggccacc tgaactctct gaccctgaac agatgctgcc gtccccttct 1550

cctcccagct tctccccacc tgcacctacc tctgtgttgg atgggccccc 1600

tgcacctgtc ctgcctgggg acaaagccct ggacttccct gggttcctgg 1650

acatgatggc acctcgactc aggccgatgc gtccaccacc tcccccgccg 1700

gctaaagccc cggatcctgg ccacccagat cccctcacct gaaggccagg 1750

gaagccttga cccccagtga tgctgctgtc cctatcttca agctgtcaga 1800

ccacaccatc aatgatccag agcaacacag ccaaaagctg gaatcgccct 1850

tatttccacc ctcacctcca agggtggaaa cttgcccctt cccatttcta 1900

gagctggaac ccactccttt ttttcccatt gttctatcat ctctaggacc 1950

ggaactacta ccttctcttc tgtcatgacc ctatctaggg tggtgaaatg 2000

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gcagggccct gctcccagct gccacgctct atcatatgga gcgaggtgtt 2350

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gcttcctgtt caagctgtgt ccagcttttc ccctggggct ccaggacctt 2650

ccctacctcc accaccaaac caagggattt atagcaaagg ctaagcctgc 2700
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304

agtttactct ggggggttcag ggagccgaaa ggcttaaata gtttaagtag 2750

gtgatgggaa gatgagatta cctcatttag ggctcaggca gactcacctc 2800

acatactccc tgctccctgt ggtagagaca cctgagagaa aggggagggg 2850

tcaacaatga gagaccagga gtaggtccta tcagtgcccc ccagagtaga 2900

gagcaataag agcccagccc agtgcagtcc cggctgtgtt ttcctacctg 2950

gtgatcagaa gtgtctggtt tgcttggctg cccatttgcc tcttgagtgg 3000

gcagccctgg gcttgggccc ctccctccgg ccctcagtgt tggctctgca 3050

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gagtcctcca ttctgtactg gggggctggc taggacctgg ggctgtggcc 3150

tctcaggggg cagcctctcc atggcaggca tccctgcctt gggctgccct 3200

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aggaggaaag agccaaggcc cacttttggg atcaggtgcc tgatcactgg 3550

gccccctacc tcagcccccc tttccctgga gcacctgccc cacctgccca 3600

cagagaacac agtggtctcc cctgtccggg ggcggctttt tccttccttg 3650

gagcgtccct gacggacaag tggaggcctc ttgctgcggc tgcaatggat 3700

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cgtcctgcag gctggaggtg gcatccacac tggacagcag gaggaggga 3800

gtgagggtaa catttccatt tcccttcatg ttttgtttct tacgttcttt 3850

cagcatgctc cttaaaaccc cagaagcccc aatttccccca agccccattt 3900

tttcttgtct ttatctaata aactcaatat taag 3934

<210> 315
<211> 370
<212> PRT
<213> Homo sapiens

<400> 315
Met Gln Leu Ala Lys Tyr Gln Ser His Ser Lys Ser Cys Pro Thr
1   5   10   15

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Val Phe Pro Pro Thr Pro Val Leu Cys Leu Pro Asn Gln Val Leu
            20          25              30

Gln Arg Leu Glu Gln Arg Arg Gln Gln Ala Ser Glu Arg Glu Ala
            35          40              45

Pro Ser Ile Glu Gln Arg Leu Gln Glu Val Arg Glu Ser Ile Arg
            50          55              60

Arg Ala Gln Val Ser Gln Val Lys Gly Ala Ala Arg Leu Ala Leu
            65          70              75

Leu Gln Gly Ala Gly Leu Asp Val Glu Arg Trp Leu Lys Pro Ala
            80          85              90

Met Thr Gln Ala Gln Asp Glu Val Glu Gln Glu Arg Arg Leu Ser
            95          100             105

Glu Ala Arg Leu Ser Gln Arg Asp Leu Ser Pro Thr Ala Glu Asp
            110         115             120

Ala Glu Leu Ser Asp Phe Glu Glu Cys Glu Glu Thr Gly Glu Leu
            125         130             135

Phe Glu Glu Pro Ala Pro Gln Ala Leu Ala Thr Arg Ala Leu Pro
            140         145             150

Cys Pro Ala His Val Val Phe Arg Tyr Gln Ala Gly Arg Glu Asp
            155         160             165

Glu Leu Thr Ile Thr Glu Gly Glu Trp Leu Glu Val Ile Glu Glu
            170         175             180

Gly Asp Ala Asp Glu Trp Val Lys Ala Arg Asn Gln His Gly Glu
            185         190             195

Val Gly Phe Val Pro Glu Arg Tyr Leu Asn Phe Pro Asp Leu Ser
            200         205             210

Leu Pro Glu Ser Ser Gln Asp Ser Asp Asn Pro Cys Gly Ala Glu
            215         220             225

Pro Thr Ala Phe Leu Ala Gln Ala Leu Tyr Ser Tyr Thr Gly Gln
            230         235             240

Ser Ala Glu Glu Leu Ser Phe Pro Glu Gly Ala Leu Ile Arg Leu
            245         250             255

Leu Pro Arg Ala Gln Asp Gly Val Asp Asp Gly Phe Trp Arg Gly
            260         265             270

Glu Phe Gly Gly Arg Val Gly Val Phe Pro Ser Leu Leu Val Glu
            275         280             285

Glu Leu Leu Gly Pro Pro Gly Pro Pro Glu Leu Ser Asp Pro Glu
            290         295             300

Gln Met Leu Pro Ser Pro Ser Pro Pro Ser Phe Ser Pro Pro Ala
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306

Pro Thr Ser Val Leu Asp Gly Pro Pro Ala Pro Val Leu Pro Gly
                    320   325   330

Asp Lys Ala Leu Asp Phe Pro Gly Phe Leu Asp Met Met Ala Pro
                    335   340   345

Arg Leu Arg Pro Met Arg Pro Pro Pro Pro Pro Ala Lys Ala
                    350   355   360

Pro Asp Pro Gly His Pro Asp Pro Leu Thr
                    365   370

<210> 316
<211> 4407
<212> DNA
<213> Homo sapiens

<400> 316
 cacagggaga cccacagaca catatgcacg agagagacag aggaggaaag 50

 agacagagac aaaggcacag cggaagaagg cagagacagg gcaggcacag 100

 aagcggccca gacagagtcc tacagaggga gaggccagag aagctgcaga 150

 agacacaggc agggagagac aaagatccag gaaaggaggg ctcaggagga 200

 gagtttggag aagccagacc cctgggcacc tctcccaagc ccaaggacta 250

 agttttctcc atttccttta acggtcctca gcccttctga aaactttgcc 300

 tctgaccttg gcaggagtcc aagcccccag gctacagaga ggagctttcc 350

 aaagctaggg tgtggaggac ttggtgccct agacggcctc agtccctccc 400

 agctgcagta ccagtgccat gtcccagaca ggctcgcatc ccgggagggg 450

 cttggcaggg cgctggctgt ggggagccca accctgcctc ctgctcccca 500

 ttgtgccgct ctcctggctg gtgtggctgc ttctgctact gctggcctct 550

 ctcctgccct cagcccggct ggccagcccc ctcccccggg aggaggagat 600

 cgtgtttcca gagaagctca cggcagcgt cctgcctggc tcgggcgccc 650

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 cctgggccag gcgcctgagc tgctgggtgg agcagagcct ggcacctacc 800

 tgactggcac catcaatgga gatccggagt cggtggcatc tctgcactgg 850

 gatggggag ccctgttagg cgtgttacaa tatcggggggg ctgaactcca 900

 cctccagccc ctggagggag gcacccctaa ctctgctggg ggacctgggg 950

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ctcacatcct acgccggaag agtcctgcca gcggtcaagg tcccatgtgc 1000

aacgtcaagg ctcctcttgg aagccccagc cccagacccc gaagagccaa 1050

gcgctttgct tcactgagta gatttgtgga gacactggtg gtggcagatg 1100

acaagatggc cgcattccac ggtgcggggc taaagcgcta cctgctaaca 1150

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cacagccatt ctgtttaccc gtcaggacct gtgtggagtc tccacttgcg 1400

acacgctggg tatggctgat gtgggcaccg tctgtgaccc ggctcggagc 1450

tgtgccattg tggaggatga tgggctccag tcagccttca ctgctgctca 1500

tgaactgggt catgtcttca acatgctcca tgacaactcc aagccatgca 1550

tcagtttgaa tgggcctttg agcacctctc gccatgtcat ggcccctgtg 1600

atggctcatg tggatcctga ggagccctgg tccccctgca gtgcccgctt 1650

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tgcgggcccg cacaggcctg catgggtggt cgctgcctcc acatggacca 1950

gctccaggac ttcaatattc cacaggctgg tggctggggt ccttggggac 2000

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gacctcttca agagcttccc agggcccatg gactgggttc ctcgctacac 2250

aggcgtggcc ccccaggacc agtgcaaact cacctgccag gcccgggcac 2300

tgggctacta ctatgtgctg gagccacggg tggtagatgg gaccccctgt 2350

tccccggaca gctcctcggt ctgtgtccag ggccgatgca tccatgctgg 2400
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308

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ctgtgatcgc atcattggct ccaagaagaa gtttgacaag tgcatggtgt 2450

gcggagggga cggttctggt tgcagcaagc agtcaggctc cttcaggaaa 2500

ttcaggtacg gatacaacaa tgtggtcact atccccgcgg gggccaccca 2550

cattcttgtc cggcagcagg gaaaccctgg ccaccggagc atctacttgg 2600

ccctgaagct gccagatggc tcctatgccc tcaatggtga atacacgctg 2650

atgccctccc ccacagatgt ggtactgcct ggggcagtca gcttgcgcta 2700

cagcggggcc actgcagcct cagagacact gtcaggccat gggccactgg 2750

cccagccttt gacactgcaa gtcctagtgg ctggcaaccc ccaggacaca 2800

cgcctccgat acagcttctt cgtgccccgg ccgacccctt caacgccacg 2850

ccccactccc caggactggc tgcaccgaag agcacagatt ctggagatcc 2900

ttcggcggcg cccctgggcg ggcaggaaat aacctcacta tcccggctgc 2950

cctttctggg caccggggcc tcggacttag ctgggagaaa gagagagctt 3000

ctgttgctgc ctcatgctaa gactcagtgg ggaggggctg tgggcgtgag 3050

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gggaaggcag ggagggcctg ggccccagtt gtatttattt agtatttatt 3250

cacttttatt tagcaccagg gaaggggaca aggactaggg tcctggggaa 3300

cctgacccct gaccctcat agccctcacc ctggggctag gaaatccagg 3350

gtggtggtga taggtataag tggtgtgtgt atgcgtgtgt gtgtgtgtgt 3400

gaaaatgtgt gtgtgcttat gtatgaggta caacctgttc tgctttcctc 3450

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gcacaatctc ggctcactgc atcctccgcc tcccgggttc aagtgattct 3650

catgcctcag cctcctgagt agctgggatt acaggctcct gccaccacgc 3700

ccagctaatt tttgttttgt tttgtttgga gacagagtct cgctattgtc 3750

accagggctg gaatgatttc agctcactgc aaccttcgcc acctgggttc 3800

cagcaattct cctgcctcag cctcccgagt agctgagatt ataggcacct 3850
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309

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accaccacgc ccggctaatt tttgtatttt tagtagagac ggggtttcac 3900

catgttggcc aggctggtct cgaactcctg accttaggtg atccactcgc 3950

cttcatctcc caaagtgctg ggattacagg cgtgagccac cgtgcctggc 4000

cacgcccaac taatttttgt attttttagta gagacagggt ttcaccatgt 4050

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atgtggttgc atcctaactc catgtctctg agcattagat ttctcatttg 4250

ccaataataa tacctccctt agaagtttgt tgtgaggatt aaataatgta 4300

aataaagaac tagcataaca ctcaaaaaaa aaaaaaaaaa aaaaaaaaaa 4350

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 4400

aaggaaa 4407
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<210> 317
<211> 837
<212> PRT
<213> Homo sapiens

<400> 317
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  Met Ser Gln Thr Gly Ser His Pro Gly Arg Gly Leu Ala Gly Arg
   1               5                  10                  15

  Trp Leu Trp Gly Ala Gln Pro Cys Leu Leu Leu Pro Ile Val Pro
                  20                  25                  30

  Leu Ser Trp Leu Val Trp Leu Leu Leu Leu Leu Leu Ala Ser Leu
                  35                  40                  45

  Leu Pro Ser Ala Arg Leu Ala Ser Pro Leu Pro Arg Glu Glu Glu
                  50                  55                  60

  Ile Val Phe Pro Glu Lys Leu Asn Gly Ser Val Leu Pro Gly Ser
                  65                  70                  75

  Gly Ala Pro Ala Arg Leu Leu Cys Arg Leu Gln Ala Phe Gly Glu
                  80                  85                  90

  Thr Leu Leu Leu Glu Leu Glu Gln Asp Ser Gly Val Gln Val Glu
                  95                 100                 105

  Gly Leu Thr Val Gln Tyr Leu Gly Gln Ala Pro Glu Leu Leu Gly
                 110                 115                 120

  Gly Ala Glu Pro Gly Thr Tyr Leu Thr Gly Thr Ile Asn Gly Asp
                 125                 130                 135

  Pro Glu Ser Val Ala Ser Leu His Trp Asp Gly Gly Ala Leu Leu
```
```
                            310
```

```
                140                      145                      150
Gly Val Leu Gln Tyr Arg Gly Ala Glu Leu His Leu Gln Pro Leu
                155                      160                      165
Glu Gly Gly Thr Pro Asn Ser Ala Gly Gly Pro Gly Ala His Ile
                170                      175                      180
Leu Arg Arg Lys Ser Pro Ala Ser Gly Gln Gly Pro Met Cys Asn
                185                      190                      195
Val Lys Ala Pro Leu Gly Ser Pro Ser Pro Arg Pro Arg Arg Ala
                200                      205                      210
Lys Arg Phe Ala Ser Leu Ser Arg Phe Val Glu Thr Leu Val Val
                215                      220                      225
Ala Asp Asp Lys Met Ala Ala Phe His Gly Ala Gly Leu Lys Arg
                230                      235                      240
Tyr Leu Leu Thr Val Met Ala Ala Ala Ala Lys Ala Phe Lys His
                245                      250                      255
Pro Ser Ile Arg Asn Pro Val Ser Leu Val Val Thr Arg Leu Val
                260                      265                      270
Ile Leu Gly Ser Gly Glu Glu Gly Pro Gln Val Gly Pro Ser Ala
                275                      280                      285
Ala Gln Thr Leu Arg Ser Phe Cys Ala Trp Gln Arg Gly Leu Asn
                290                      295                      300
Thr Pro Glu Asp Ser Gly Pro Asp His Phe Asp Thr Ala Ile Leu
                305                      310                      315
Phe Thr Arg Gln Asp Leu Cys Gly Val Ser Thr Cys Asp Thr Leu
                320                      325                      330
Gly Met Ala Asp Val Gly Thr Val Cys Asp Pro Ala Arg Ser Cys
                335                      340                      345
Ala Ile Val Glu Asp Asp Gly Leu Gln Ser Ala Phe Thr Ala Ala
                350                      355                      360
His Glu Leu Gly His Val Phe Asn Met Leu His Asp Asn Ser Lys
                365                      370                      375
Pro Cys Ile Ser Leu Asn Gly Pro Leu Ser Thr Ser Arg His Val
                380                      385                      390
Met Ala Pro Val Met Ala His Val Asp Pro Glu Glu Pro Trp Ser
                395                      400                      405
Pro Cys Ser Ala Arg Phe Ile Thr Asp Phe Leu Asp Asn Gly Tyr
                410                      415                      420
Gly His Cys Leu Leu Asp Lys Pro Glu Ala Pro Leu His Leu Pro
                425                      430                      435
```

311

Val Thr Phe Pro Gly Lys Asp Tyr Asp Ala Asp Arg Gln Cys Gln
440   445   450

Leu Thr Phe Gly Pro Asp Ser Arg His Cys Pro Gln Leu Pro Pro
455   460   465

Pro Cys Ala Ala Leu Trp Cys Ser Gly His Leu Asn Gly His Ala
470   475   480

Met Cys Gln Thr Lys His Ser Pro Trp Ala Asp Gly Thr Pro Cys
485   490   495

Gly Pro Ala Gln Ala Cys Met Gly Gly Arg Cys Leu His Met Asp
500   505   510

Gln Leu Gln Asp Phe Asn Ile Pro Gln Ala Gly Gly Trp Gly Pro
515   520   525

Trp Gly Pro Trp Gly Asp Cys Ser Arg Thr Cys Gly Gly Gly Val
530   535   540

Gln Phe Ser Ser Arg Asp Cys Thr Arg Pro Val Pro Arg Asn Gly
545   550   555

Gly Lys Tyr Cys Glu Gly Arg Arg Thr Arg Phe Arg Ser Cys Asn
560   565   570

Thr Glu Asp Cys Pro Thr Gly Ser Ala Leu Thr Phe Arg Glu Glu
575   580   585

Gln Cys Ala Ala Tyr Asn His Arg Thr Asp Leu Phe Lys Ser Phe
590   595   600

Pro Gly Pro Met Asp Trp Val Pro Arg Tyr Thr Gly Val Ala Pro
605   610   615

Gln Asp Gln Cys Lys Leu Thr Cys Gln Ala Arg Ala Leu Gly Tyr
620   625   630

Tyr Tyr Val Leu Glu Pro Arg Val Val Asp Gly Thr Pro Cys Ser
635   640   645

Pro Asp Ser Ser Ser Val Cys Val Gln Gly Arg Cys Ile His Ala
650   655   660

Gly Cys Asp Arg Ile Ile Gly Ser Lys Lys Lys Phe Asp Lys Cys
665   670   675

Met Val Cys Gly Gly Asp Gly Ser Gly Cys Ser Lys Gln Ser Gly
680   685   690

Ser Phe Arg Lys Phe Arg Tyr Gly Tyr Asn Asn Val Val Thr Ile
695   700   705

Pro Ala Gly Ala Thr His Ile Leu Val Arg Gln Gln Gly Asn Pro
710   715   720

Gly His Arg Ser Ile Tyr Leu Ala Leu Lys Leu Pro Asp Gly Ser

312

```
                    725                    730                    735
 Tyr Ala Leu Asn Gly Glu Tyr Thr Leu Met Pro Ser Pro Thr Asp
                    740                    745                    750
 Val Val Leu Pro Gly Ala Val Ser Leu Arg Tyr Ser Gly Ala Thr
                    755                    760                    765
 Ala Ala Ser Glu Thr Leu Ser Gly His Gly Pro Leu Ala Gln Pro
                    770                    775                    780
 Leu Thr Leu Gln Val Leu Val Ala Gly Asn Pro Gln Asp Thr Arg
                    785                    790                    795
 Leu Arg Tyr Ser Phe Phe Val Pro Arg Pro Thr Pro Ser Thr Pro
                    800                    805                    810
 Arg Pro Thr Pro Gln Asp Trp Leu His Arg Arg Ala Gln Ile Leu
                    815                    820                    825
 Glu Ile Leu Arg Arg Arg Pro Trp Ala Gly Arg Lys
                    830                    835
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<210> 318
<211> 23
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-23
<223> Synthetic construct.

<400> 318
 ccctgaagct gccagatggc tcc 23

<210> 319
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 319
 ctgtgctctt cggtgcagcc agtc 24

<210> 320
<211> 43
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-43
<223> Synthetic construct.

<400> 320
 ccacagatgt ggtactgcct ggggcagtca gcttgcgcta cag 43

<210> 321
<211> 1197
<212> DNA
<213> Homo sapiens

<400> 321
 cagcagtggt ctctcagtcc tctcaaagca aggaaagagt actgtgtgct 50

 gagagaccat ggcaaagaat cctccagaga attgtgaaga ctgtcacatt 100

 ctaaatgcag aagcttttaa atccaagaaa atatgtaaat cacttaagat 150

 ttgtggactg gtgtttggta tcctggccct aactctaatt gtcctgtttt 200

 gggggagcaa gcacttctgg ccggaggtac ccaaaaaagc ctatgacatg 250

 gagcacactt tctacagcaa tggagagaag aagaagattt acatggaaat 300

 tgatcctgtg accagaactg aaatattcag aagcggaaat ggcactgatg 350

 aaacattgga agtgcacgac tttaaaaacg atacactgg catctacttc 400

 gtgggtcttc aaaaatgttt tatcaaaact cagattaaag tgattcctga 450

 attttctgaa ccagaagagg aaatagatga gaatgaagaa attaccacaa 500

 ctttctttga acagtcagtg atttgggtcc cagcagaaaa gcctattgaa 550

 aaccgagatt ttcttaaaaa ttccaaaatt ctggagattt gtgataacgt 600

 gaccatgtat tggatcaatc ccactctaat atcagtttct gagttacaag 650

 actttgagga ggagggagaa gatcttcact ttcctgccaa cgaaaaaaaa 700

 gggattgaac aaaatgaaca gtgggtggtc cctcaagtga agtagagaa 750

 gacccgtcac gccagacaag caagtgagga agaacttcca ataaatgact 800

 atactgaaaa tggaatagaa tttgatccca tgctggatga gagaggttat 850

 tgttgtattt actgccgtcg aggcaaccgc tattgccgcc gcgtctgtga 900

 acctttacta ggctactacc catatccata ctgctaccaa ggaggacgag 950

 tcatctgtcg tgtcatcatg ccttgtaact ggtgggtggc ccgcatgctg 1000

 gggagggtct aataggaggt ttgagctcaa atgcttaaac tgctggcaac 1050

 atataataaa tgcatgctat tcaatgaatt tctgcctatg aggcatctgg 1100

 cccctggtag ccagctctcc agaattactt gtaggtaatt cctctcttca 1150

 tgttctaata aacttctaca ttatcaccaa aaaaaaaaa· aaaaaaa 1197

<210> 322

314

<211> 317
<212> PRT
<213> Homo sapiens

<400> 322

```
Met Ala Lys Asn Pro Pro Glu Asn Cys Glu Asp Cys His Ile Leu
 1               5                  10                  15

Asn Ala Glu Ala Phe Lys Ser Lys Lys Ile Cys Lys Ser Leu Lys
                20              25                  30

Ile Cys Gly Leu Val Phe Gly Ile Leu Ala Leu Thr Leu Ile Val
                35              40                  45

Leu Phe Trp Gly Ser Lys His Phe Trp Pro Glu Val Pro Lys Lys
                50              55                  60

Ala Tyr Asp Met Glu His Thr Phe Tyr Ser Asn Gly Glu Lys Lys
                65              70                  75

Lys Ile Tyr Met Glu Ile Asp Pro Val Thr Arg Thr Glu Ile Phe
                80              85                  90

Arg Ser Gly Asn Gly Thr Asp Glu Thr Leu Glu Val His Asp Phe
                95             100                 105

Lys Asn Gly Tyr Thr Gly Ile Tyr Phe Val Gly Leu Gln Lys Cys
               110             115                 120

Phe Ile Lys Thr Gln Ile Lys Val Ile Pro Glu Phe Ser Glu Pro
               125             130                 135

Glu Glu Glu Ile Asp Glu Asn Glu Glu Ile Thr Thr Thr Phe Phe
               140             145                 150

Glu Gln Ser Val Ile Trp Val Pro Ala Glu Lys Pro Ile Glu Asn
               155             160                 165

Arg Asp Phe Leu Lys Asn Ser Lys Ile Leu Glu Ile Cys Asp Asn
               170             175                 180

Val Thr Met Tyr Trp Ile Asn Pro Thr Leu Ile Ser Val Ser Glu
               185             190                 195

Leu Gln Asp Phe Glu Glu Glu Gly Glu Asp Leu His Phe Pro Ala
               200             205                 210

Asn Glu Lys Lys Gly Ile Glu Gln Asn Glu Gln Trp Val Val Pro
               215             220                 225

Gln Val Lys Val Glu Lys Thr Arg His Ala Arg Gln Ala Ser Glu
               230             235                 240

Glu Glu Leu Pro Ile Asn Asp Tyr Thr Glu Asn Gly Ile Glu Phe
               245             250                 255

Asp Pro Met Leu Asp Glu Arg Gly Tyr Cys Cys Ile Tyr Cys Arg
               260             265                 270
```

315

```
Arg Gly Asn Arg Tyr Cys Arg Arg Val Cys Glu Pro Leu Leu Gly
              275             280                     285

Tyr Tyr Pro Tyr Pro Tyr Cys Tyr Gln Gly Gly Arg Val Ile Cys
              290             295                     300

Arg Val Ile Met Pro Cys Asn Trp Trp Val Ala Arg Met Leu Gly
              305             310                     315

Arg Val
```

<210> 323
<211> 1174
<212> DNA
<213> Homo sapiens

<400> 323

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gcggaactgg ctccggctgg cacctgagga gcggcgtgac cccgagggcc   50

cagggagctg cccggctggc ctaggcaggc agccgcacca tggccagcac  100

ggccgtgcag cttctgggct tcctgctcag cttcctgggc atggtgggca  150

cgttgatcac caccatcctg ccgcactggc ggaggacagc gcacgtgggc  200

accaacatcc tcacggccgt gtcctacctg aaagggctct ggatggagtg  250

tgtgtggcac agcacaggca tctaccagtg ccagatctac cgatccctgc  300

tggcgctgcc ccaagacctc caggctgccc gcgccctcat ggtcatctcc  350

tgcctgctct cgggcatagc ctgcgcctgc ccgtcatcg ggatgaagtg  400

cacgcgctgc gccaagggca cacccgccaa gaccaccttt gccatcctcg  450

gcggcaccct cttcatcctg gccggcctcc tgtgcatggt ggccgtctcc  500

tggaccacca cgacgtggt gcagaacttc tacaacccgc tgctgcccag  550

cggcatgaag tttgagattg gccaggccct gtacctgggc ttcatctcct  600

cgtccctctc gctcattggt ggcaccctgc tttgcctgtc ctgccaggac  650

gaggcaccct acaggcccta ccaggccccg cccagggcca ccacgaccac  700

tgcaaacacc gcacctgcct accagccacc agctgcctac aaagacaatc  750

gggccccctc agtgacctcg gccacgcaca gcgggtacag gctgaacgac  800

tacgtgtgag tccccacagc ctgcttctcc cctgggctgc tgtgggctgg  850

gtccccggcg ggactgtcaa tggaggcagg ggttccagca caaagtttac  900

ttctgggcaa tttttgtatc caaggaaata atgtgaatgc gaggaaatgt  950

ctttagagca cagggacaga gggggaaata agaggaggag aaagctctct 1000
```

ataccaaaga ctgaaaaaaa aaatcctgtc tgtttttgta tttattatat 1050

atatttatgt gggtgatttg ataacaagtt taatataaag tgacttggga 1100

gtttggtcag tggggttggt ttgtgatcca ggaataaacc ttgcggatgt 1150

ggctgtttat gaaaaaaaaa aaaa 1174

<210> 324
<211> 239
<212> PRT
<213> Homo sapiens

<400> 324

```
Met Ala Ser Thr Ala Val Gln Leu Leu Gly Phe Leu Leu Ser Phe
 1               5                  10                  15

Leu Gly Met Val Gly Thr Leu Ile Thr Thr Ile Leu Pro His Trp
                20                  25                  30

Arg Arg Thr Ala His Val Gly Thr Asn Ile Leu Thr Ala Val Ser
                35                  40                  45

Tyr Leu Lys Gly Leu Trp Met Glu Cys Val Trp His Ser Thr Gly
                50                  55                  60

Ile Tyr Gln Cys Gln Ile Tyr Arg Ser Leu Leu Ala Leu Pro Gln
                65                  70                  75

Asp Leu Gln Ala Ala Arg Ala Leu Met Val Ile Ser Cys Leu Leu
                80                  85                  90

Ser Gly Ile Ala Cys Ala Cys Ala Val Ile Gly Met Lys Cys Thr
                95                  100                 105

Arg Cys Ala Lys Gly Thr Pro Ala Lys Thr Thr Phe Ala Ile Leu
                110                 115                 120

Gly Gly Thr Leu Phe Ile Leu Ala Gly Leu Leu Cys Met Val Ala
                125                 130                 135

Val Ser Trp Thr Thr Asn Asp Val Val Gln Asn Phe Tyr Asn Pro
                140                 145                 150

Leu Leu Pro Ser Gly Met Lys Phe Glu Ile Gly Gln Ala Leu Tyr
                155                 160                 165

Leu Gly Phe Ile Ser Ser Ser Leu Ser Leu Ile Gly Gly Thr Leu
                170                 175                 180

Leu Cys Leu Ser Cys Gln Asp Glu Ala Pro Tyr Arg Pro Tyr Gln
                185                 190                 195

Ala Pro Pro Arg Ala Thr Thr Thr Thr Ala Asn Thr Ala Pro Ala
                200                 205                 210

Tyr Gln Pro Pro Ala Ala Tyr Lys Asp Asn Arg Ala Pro Ser Val
                215                 220                 225
```

317

Thr Ser Ala Thr His Ser Gly Tyr Arg Leu Asn Asp Tyr Val
          230   235

<210> 325
<211> 2121
<212> DNA
<213> Homo sapiens

<400> 325

```
gagctcccct caggagcgcg ttagcttcac accttcggca gcaggagggc   50
ggcagcttct cgcaggcggc agggcgggcg gccaggatca tgtccaccac  100
cacatgccaa gtggtggcgt tcctcctgtc catcctgggg ctggccggct  150
gcatcgcggc caccgggatg gacatgtgga gcacccagga cctgtacgac  200
aaccccgtca cctccgtgtt ccagtacgaa gggctctgga ggagctgcgt  250
gaggcagagt tcaggcttca ccgaatgcag ccctatttc accatcctgg   300
gacttccagc catgctgcag gcagtgcgag ccctgatgat cgtaggcatc  350
gtcctgggtg ccattggcct cctggtatcc atctttgccc tgaaatgcat  400
ccgcattggc agcatggagg actctgccaa agccaacatg acactgacct  450
ccgggatcat gttcattgtc tcaggtcttt gtgcaattgc tggagtgtct  500
gtgtttgcca acatgctggt gactaacttc tggatgtcca gctaacat   550
gtacaccggc atgggtggga tggtgcagac tgttcagacc aggtacacat  600
ttggtgcggc tctgttcgtg ggctgggtcg ctggaggcct cacactaatt  650
gggggtgtga tgatgtgcat cgcctgccgg ggcctggcac agaagaaac   700
caactacaaa gccgtttctt atcatgcctc aggccacagt gttgcctaca  750
agcctggagg cttcaaggcc agcactggct ttgggtccaa caccaaaaac  800
aagaagatat acgatggagg tgcccgcaca gaggacgagg tacaatctta  850
tccttccaag cacgactatg tgtaatgctc taagacctct cagcacgggc  900
ggaagaaact cccggagagc tcacccaaaa acaaggaga tcccatctag  950
atttcttctt gcttttgact cacagctgga agttagaaaa gcctcgattt 1000
catctttgga gaggccaaat ggtcttagcc tcagtctctg tctctaaata 1050
ttccaccata aaacagctga gttatttatg aattagaggc tatagctcac 1100
attttcaatc ctctatttct tttttaaat ataactttct actctgatga  1150
gagaatgtgg ttttaatctc tctctcacat tttgatgatt tagacagact 1200
ccccctcttc ctcctagtca ataaacccat tgatgatcta tttcccagct 1250
```

318

```
tatccccaag aaaacttttg aaaggaaaga gtagacccaa agatgttatt 1300

ttctgctgtt tgaattttgt ctccccaccc ccaacttggc tagtaataaa 1350

cacttactga agaagaagca ataagagaaa gatatttgta atctctccag 1400

cccatgatct cggttttctt acactgtgat cttaaaagtt accaaaccaa 1450

agtcattttc agtttgaggc aaccaaacct ttctactgct gttgacatct 1500

tcttattaca gcaacaccat tctaggagtt tcctgagctc tccactggag 1550

tcctctttct gtcgcgggtc agaaattgtc cctagatgaa tgagaaaatt 1600

attttttta atttaagtcc taaatatagt taaaataaat aatgttttag 1650

taaaatgata cactatctct gtgaaatagc ctcaccccta catgtggata 1700

gaaggaaatg aaaaaataat tgctttgaca ttgtctatat ggtactttgt 1750

aaagtcatgc ttaagtacaa attccatgaa aagctcacac ctgtaatcct 1800

agcactttgg gaggctgagg aggaaggatc acttgagccc agaagttcga 1850

gactagcctg ggcaacatgg agaagccctg tctctacaaa atacagagag 1900

aaaaaatcag ccagtcatgg tggcatacac ctgtagtccc agcattccgg 1950

gaggctgagg tgggaggatc acttgagccc agggaggttg gggctgcagt 2000

gagccatgat cacaccactg cactccagcc aggtgacata gcgagatcct 2050

gtctaaaaaa ataaaaaata aataatggaa cacagcaagt cctaggaagt 2100

aggttaaaac taattcttta a 2121
```

<210> 326
<211> 261
<212> PRT
<213> Homo sapiens

<400> 326

```
 Met Ser Thr Thr Thr Cys Gln Val Val Ala Phe Leu Leu Ser Ile
  1               5                  10                  15

 Leu Gly Leu Ala Gly Cys Ile Ala Ala Thr Gly Met Asp Met Trp
                  20                  25                  30

 Ser Thr Gln Asp Leu Tyr Asp Asn Pro Val Thr Ser Val Phe Gln
                  35                  40                  45

 Tyr Glu Gly Leu Trp Arg Ser Cys Val Arg Gln Ser Ser Gly Phe
                  50                  55                  60

 Thr Glu Cys Arg Pro Tyr Phe Thr Ile Leu Gly Leu Pro Ala Met
                  65                  70                  75

 Leu Gln Ala Val Arg Ala Leu Met Ile Val Gly Ile Val Leu Gly
```

319

```
Ala Ile Gly Leu Leu Val Ser Ile Phe Ala Leu Lys Cys Ile Arg
                 95                  100                 105

Ile Gly Ser Met Glu Asp Ser Ala Lys Ala Asn Met Thr Leu Thr
                110                 115                 120

Ser Gly Ile Met Phe Ile Val Ser Gly Leu Cys Ala Ile Ala Gly
                125                 130                 135

Val Ser Val Phe Ala Asn Met Leu Val Thr Asn Phe Trp Met Ser
                140                 145                 150

Thr Ala Asn Met Tyr Thr Gly Met Gly Gly Met Val Gln Thr Val
                155                 160                 165

Gln Thr Arg Tyr Thr Phe Gly Ala Ala Leu Phe Val Gly Trp Val
                170                 175                 180

Ala Gly Gly Leu Thr Leu Ile Gly Gly Val Met Met Cys Ile Ala
                185                 190                 195

Cys Arg Gly Leu Ala Pro Glu Glu Thr Asn Tyr Lys Ala Val Ser
                200                 205                 210

Tyr His Ala Ser Gly His Ser Val Ala Tyr Lys Pro Gly Gly Phe
                215                 220                 225

Lys Ala Ser Thr Gly Phe Gly Ser Asn Thr Lys Asn Lys Lys Ile
                230                 235                 240

Tyr Asp Gly Gly Ala Arg Thr Glu Asp Glu Val Gln Ser Tyr Pro
                245                 250                 255

Ser Lys His Asp Tyr Val
                260
```

<210> 327
<211> 2010
<212> DNA
<213> Homo sapiens

<400> 327

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ggaaaaactg ttctcttctg tggcacagag aaccctgctt caaagcagaa 50

gtagcagttc cggagtccag ctggctaaaa ctcatcccag aggataatgg 100

caacccatgc cttagaaatc gctgggctgt ttcttggtgg tgttggaatg 150

gtgggcacag tggctgtcac tgtcatgcct cagtggagag tgtcggcctt 200

cattgaaaac aacatcgtgg tttttgaaaa cttctgggaa ggactgtgga 250

tgaattgcgt gaggcaggct aacatcagga tgcagtgcaa aatctatgat 300

tccctgctgg ctctttctcc ggacctacag gcagccagag gactgatgtg 350
```

320

```
tgctgcttcc gtgatgtcct tcttggcttt catgatggcc atccttggca 400

tgaaatgcac caggtgcacg ggggacaatg agaaggtgaa ggctcacatt 450

ctgctgacgg ctggaatcat cttcatcatc acgggcatgg tggtgctcat 500

ccctgtgagc tgggttgcca atgccatcat cagagatttc tataactcaa 550

tagtgaatgt tgcccaaaaa cgtgagcttg gagaagctct ctacttagga 600

tggaccacgg cactggtgct gattgttgga ggagctctgt tctgctgcgt 650

tttttgttgc aacgaaaaga gcagtagcta cagatactcg ataccttccc 700

atcgcacaac ccaaaaaagt tatcacaccg gaaagaagtc accgagcgtc 750

tactccagaa gtcagtatgt gtagttgtgt atgttttttt aactttacta 800

taaagccatg caaatgacaa aaatctatat tactttctca aaatggaccc 850

caaagaaact ttgatttact gttcttaact gcctaatctt aattacagga 900

actgtgcatc agctatttat gattctataa gctatttcag cagaatgaga 950

tattaaaccc aatgctttga ttgttctaga aagtatagta atttgttttc 1000

taaggtggtt caagcatcta ctcttttat catttacttc aaaatgacat 1050

tgctaaagac tgcattattt tactactgta atttctccac gacatagcat 1100

tatgtacata gatgagtgta acatttatat ctcacataga gacatgctta 1150

tatggtttta tttaaaatga aatgccagtc cattacactg aataaataga 1200

actcaactat tgcttttcag ggaaatcatg gataggttg aagaaggtta 1250

ctattaattg tttaaaaaca gcttagggat taatgtcctc catttataat 1300

gaagattaaa atgaaggctt taatcagcat tgtaaaggaa attgaatggc 1350

tttctgatat gctgttttt agcctaggag ttagaaatcc taacttcttt 1400

atcctcttct cccagaggct ttttttttct tgtgtattaa attaacattt 1450

ttaaaacgca gatattttgt caaggggctt tgcattcaaa ctgcttttcc 1500

agggctatac tcagaagaaa gataaaagtg tgatctaaga aaaagtgatg 1550

gttttaggaa agtgaaaata tttttgtttt tgtatttgaa gaagaatgat 1600

gcattttgac aagaaatcat atatgtatgg atatatttta ataagtattt 1650

gagtacagac tttgaggttt catcaatata aataaaagag cagaaaaata 1700

tgtcttggtt ttcatttgct taccaaaaaa acaacaacaa aaaaagttgt 1750

cctttgagaa cttcacctgc tcctatgtgg gtacctgagt caaaattgtc 1800
```

321

```
atttttgttc tgtgaaaaat aaatttcctt cttgtaccat ttctgtttag 1850

ttttactaaa atctgtaaat actgtatttt tctgtttatt ccaaatttga 1900

tgaaactgac aatccaattt gaaagtttgt gtcgacgtct gtctagctta 1950

aatgaatgtg ttctatttgc tttatacatt tatattaata aattgtacat 2000

ttttctaatt 2010
```

<210> 328
<211> 225
<212> PRT
<213> Homo sapiens

<400> 328

```
Met Ala Thr His Ala Leu Glu Ile Ala Gly Leu Phe Leu Gly Gly
 1               5                  10                  15

Val Gly Met Val Gly Thr Val Ala Val Thr Val Met Pro Gln Trp
                20                  25                  30

Arg Val Ser Ala Phe Ile Glu Asn Asn Ile Val Val Phe Glu Asn
                35                  40                  45

Phe Trp Glu Gly Leu Trp Met Asn Cys Val Arg Gln Ala Asn Ile
                50                  55                  60

Arg Met Gln Cys Lys Ile Tyr Asp Ser Leu Leu Ala Leu Ser Pro
                65                  70                  75

Asp Leu Gln Ala Ala Arg Gly Leu Met Cys Ala Ala Ser Val Met
                80                  85                  90

Ser Phe Leu Ala Phe Met Met Ala Ile Leu Gly Met Lys Cys Thr
                95                  100                 105

Arg Cys Thr Gly Asp Asn Glu Lys Val Lys Ala His Ile Leu Leu
                110                 115                 120

Thr Ala Gly Ile Ile Phe Ile Ile Thr Gly Met Val Val Leu Ile
                125                 130                 135

Pro Val Ser Trp Val Ala Asn Ala Ile Ile Arg Asp Phe Tyr Asn
                140                 145                 150

Ser Ile Val Asn Val Ala Gln Lys Arg Glu Leu Gly Glu Ala Leu
                155                 160                 165

Tyr Leu Gly Trp Thr Thr Ala Leu Val Leu Ile Val Gly Gly Ala
                170                 175                 180

Leu Phe Cys Cys Val Phe Cys Cys Asn Glu Lys Ser Ser Ser Tyr
                185                 190                 195

Arg Tyr Ser Ile Pro Ser His Arg Thr Thr Gln Lys Ser Tyr His
                200                 205                 210
```

322

Thr Gly Lys Lys Ser Pro Ser Val Tyr Ser Arg Ser Gln Tyr Val
            215   220   225

<210> 329
<211> 1315
<212> DNA
<213> Homo sapiens

<400> 329
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 ctgggctggg tgaatggcct ggtctcctgt gccctgccca tgtggaaggt 100

 gaccgctttc atcggcaaca gcatcgtggt ggcccaggtg gtgtgggagg 150

 gcctgtggat gtcctgcgtg gtgcagagca ccggccagat gcagtgcaag 200

 gtgtacgact cactgctggc gctgccacag gacctgcagg ctgcacgtgc 250

 cctctgtgtc atcgccctcc ttgtggccct gttcggcttg ctggtctacc 300

 ttgctggggc caagtgtacc acctgtgtgg aggagaagga ttccaaggcc 350

 cgcctggtgc tcacctctgg gattgtcttt gtcatctcag gggtcctgac 400

 gctaatcccc gtgtgctgga cggcgcatgc catcatccgg gacttctata 450

 accccctggt ggctgaggcc caaaagcggg agctgggggc ctccctctac 500

 ttgggctggg cggcctcagg ccttttgttg ctgggtgggg ggttgctgtg 550

 ctgcacttgc ccctcggggg ggtcccaggg ccccagccat tacatggccc 600

 gctactcaac atctgcccct gccatctctc gggggccctc tgagtaccct 650

 accaagaatt acgtctgacg tggaggggaa tgggggctcc gctggcgcta 700

 gagccatcca gaagtggcag tgcccaacag ctttgggatg ggttcgtacc 750

 ttttgtttct gcctcctgct atttttcttt tgactgagga tatttaaaat 800

 tcatttgaaa actgagccaa ggtgttgact cagactctca cttaggctct 850

 gctgtttctc acccttggat gatggagcca agaggggat gctttgagat 900

 tctggatctt gacatgccca tcttagaagc cagtcaagct atggaactaa 950

 tgcggaggct gcttgctgtg ctggctttgc aacaagacag actgtcccca 1000

 agagttcctg ctgctgctgg gggctgggct tccctagatg tcactggaca 1050

 gctgcccccc atcctactca ggtctctgga gctcctctct tcacccctgg 1100

 aaaaacaaat catctgttaa caaaggactg cccacctccg gaacttctga 1150

 cctctgtttc ctccgtcctg ataagacgtc cacccccag ggccaggtcc 1200

 cagctatgta gacccccgcc cccacctcca acactgcacc cttctgccct 1250

323

gcccccctcg tctcacccccc tttacactca cattttatc aaataaagca 1300

tgttttgtta gtgca 1315

<210> 330
<211> 220
<212> PRT
<213> Homo sapiens

<400> 330

```
Met Ala Ser Ala Gly Met Gln Ile Leu Gly Val Val Leu Thr Leu
 1               5                  10                  15

Leu Gly Trp Val Asn Gly Leu Val Ser Cys Ala Leu Pro Met Trp
                20                  25                  30

Lys Val Thr Ala Phe Ile Gly Asn Ser Ile Val Val Ala Gln Val
                35                  40                  45

Val Trp Glu Gly Leu Trp Met Ser Cys Val Val Gln Ser Thr Gly
                50                  55                  60

Gln Met Gln Cys Lys Val Tyr Asp Ser Leu Leu Ala Leu Pro Gln
                65                  70                  75

Asp Leu Gln Ala Ala Arg Ala Leu Cys Val Ile Ala Leu Leu Val
                80                  85                  90

Ala Leu Phe Gly Leu Leu Val Tyr Leu Ala Gly Ala Lys Cys Thr
                95                  100                 105

Thr Cys Val Glu Glu Lys Asp Ser Lys Ala Arg Leu Val Leu Thr
                110                 115                 120

Ser Gly Ile Val Phe Val Ile Ser Gly Val Leu Thr Leu Ile Pro
                125                 130                 135

Val Cys Trp Thr Ala His Ala Ile Ile Arg Asp Phe Tyr Asn Pro
                140                 145                 150

Leu Val Ala Glu Ala Gln Lys Arg Glu Leu Gly Ala Ser Leu Tyr
                155                 160                 165

Leu Gly Trp Ala Ala Ser Gly Leu Leu Leu Leu Gly Gly Gly Leu
                170                 175                 180

Leu Cys Cys Thr Cys Pro Ser Gly Gly Ser Gln Gly Pro Ser His
                185                 190                 195

Tyr Met Ala Arg Tyr Ser Thr Ser Ala Pro Ala Ile Ser Arg Gly
                200                 205                 210

Pro Ser Glu Tyr Pro Thr Lys Asn Tyr Val
                215                 220
```

<210> 331
<211> 1160
<212> DNA

<213> Homo sapiens

<400> 331
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gccaaggaga acatcatcaa agacttctct agactcaaaa ggcttccacg 50

ttctacatct tgagcatctt ctaccactcc gaattgaacc agtcttcaaa 100

gtaaaggcaa tggcatttta tcccttgcaa attgctgggc tggttcttgg 150

gttccttggc atggtgggga ctcttgccac aacccttctg cctcagtggt 200

ggagtatcag cttttgttgg cagcaacatt attgtctttg agaggctctg 250

ggaagggctc tggatgaatt gcatccgaca agccagggtc cggttgcaat 300

gcaagttcta tagctccttg ttggctctcc cgcctgccct ggaaacagcc 350

cgggccctca tgtgtgtggc tgttgctctc tccttgatcg ccctgcttat 400

tggcatctgt ggcatgaagc aggtccagtg cacaggctct aacgagaggg 450

ccaaagcata ccttctggga acttcaggag tcctcttcat cctgacgggt 500

atcttcgttc tgattccggt gagctggaca gccaatataa tcatcagaga 550

tttctacaac ccagccatcc acataggtca gaaacgagag ctgggagcag 600

cacttttcct tggctgggca agcgctgctg tcctcttcat tggagggggt 650

ctgctttgtg gattttgctg ctgcaacaga aagaagcaag ggtacagata 700

tccagtgcct ggctaccgtg tgccacacac agataagcga agaaatacga 750

caatgcttag taagacctcc accagttatg tctaatgcct ccttttggct 800

ccaagtatgg actatggtca atgttttta taaagtcctg ctagaaactg 850

taagtatgtg aggcaggaga acttgcttta tgtctagatt tacattgata 900

cgaaagtttc aatttgttac tggtggtagg aatgaaaatg acttacttgg 950

acattctgac ttcaggtgta ttaaatgcat tgactattgt tggacccaat 1000

cgctgctcca attttcatat tctaaattca agtatacccca taatcattag 1050

caagtgtaca atgatggact acttattact ttttgaccat catgtattat 1100

ctgataagaa tctaaagttg aaattgatat ctataacaa taaaacatat 1150

acctattcta 1160
```

<210> 332
<211> 173
<212> PRT
<213> Homo sapiens

<400> 332
```
Met Asn Cys Ile Arg Gln Ala Arg Val Arg Leu Gln Cys Lys Phe
```

325

```
        1                 5                      10                     15
     Tyr Ser Ser Leu Leu Ala Leu Pro Pro Ala Leu Glu Thr Ala Arg
                     20                  25                     30
     Ala Leu Met Cys Val Ala Val Ala Leu Ser Leu Ile Ala Leu Leu
                     35                  40                     45
     Ile Gly Ile Cys Gly Met Lys Gln Val Gln Cys Thr Gly Ser Asn
                     50                  55                     60
     Glu Arg Ala Lys Ala Tyr Leu Leu Gly Thr Ser Gly Val Leu Phe
                     65                  70                     75
     Ile Leu Thr Gly Ile Phe Val Leu Ile Pro Val Ser Trp Thr Ala
                     80                  85                     90
     Asn Ile Ile Ile Arg Asp Phe Tyr Asn Pro Ala Ile His Ile Gly
                     95                  100                    105
     Gln Lys Arg Glu Leu Gly Ala Ala Leu Phe Leu Gly Trp Ala Ser
                     110                 115                    120
     Ala Ala Val Leu Phe Ile Gly Gly Gly Leu Leu Cys Gly Phe Cys
                     125                 130                    135
     Cys Cys Asn Arg Lys Lys Gln Gly Tyr Arg Tyr Pro Val Pro Gly
                     140                 145                    150
     Tyr Arg Val Pro His Thr Asp Lys Arg Arg Asn Thr Thr Met Leu
                     155                 160                    165
     Ser Lys Thr Ser Thr Ser Tyr Val
                     170
```

<210> 333
<211> 535
<212> DNA
<213> Homo sapiens

<400> 333

```
 agtgacaatc tcagagcagc ttctacacca cagccatttc cagcatgaag 50

 atcactgggg gtctccttct gctctgtaca gtggtctatt tctgtagcag 100

 ctcagaagct gctagtctgt ctccaaaaaa agtggactgc agcatttaca 150

 agaagtatcc agtggtggcc atcccctgcc ccatcacata cctaccagtt 200

 tgtggttctg actacatcac ctatgggaat gaatgtcact tgtgtaccga 250

 gagcttgaaa agtaatggaa gagttcagtt tcttcacgat ggaagttgct 300

 aaattctcca tggacataga gagaaaggaa tgatattctc atcatcatct 350

 tcatcatccc aggctctgac tgagtttctt tcagttttac tgatgttctg 400

 ggtgggggac agagccagat tcagagtaat cttgactgaa tggagaaagt 450
```

```
      ttctgtgcta cccctacaaa cccatgcctc actgacagac cagcattttt 500

      tttttaacac gtcaataaaa aaataatctc ccaga 535
```

<210> 334
<211> 85
<212> PRT
<213> Homo sapiens

<400> 334

```
   Met Lys Ile Thr Gly Gly Leu Leu Leu Leu Cys Thr Val Val Tyr
    1               5                  10                   15

   Phe Cys Ser Ser Ser Glu Ala Ala Ser Leu Ser Pro Lys Lys Val
                     20                  25                   30

   Asp Cys Ser Ile Tyr Lys Lys Tyr Pro Val Val Ala Ile Pro Cys
                     35                  40                   45

   Pro Ile Thr Tyr Leu Pro Val Cys Gly Ser Asp Tyr Ile Thr Tyr
                     50                  55                   60

   Gly Asn Glu Cys His Leu Cys Thr Glu Ser Leu Lys Ser Asn Gly
                     65                  70                   75

   Arg Val Gln Phe Leu His Asp Gly Ser Cys
                     80                  85
```

<210> 335
<211> 742
<212> DNA
<213> Homo sapiens

<400> 335

```
    cccgcgcccg gttctccctc gcagcacctc gaagtgcgcc cctcgccctc 50

    ctgctcgcgc cccgccgcca tggctgcctc ccccgcgcgg cctgctgtcc 100

    tggccctgac cgggctggcg ctgctcctgc tcctgtgctg gggcccaggt 150

    ggcataagtg gaaataaact caagctgatg cttcaaaaac gagaagcacc 200

    tgttccaact aagactaaag tggccgttga tgagaataaa gccaaagaat 250

    tccttggcag cctgaagcgc cagaagcggc agctgtggga ccggactcgg 300

    cccgaggtgc agcagtggta ccagcagttt ctctacatgg ctttgatga 350

    agcgaaattt gaagatgaca tcacctattg cttaacaga gatcgaaatg 400

    gacatgaata ctatggcgat tactaccaac gtcactatga tgaagactct 450

    gcaattggtc cccggagccc ctacggcttt aggcatggag ccagcgtcaa 500

    ctacgatgac tactaaccat gacttgccac acgctgtaca agaagcaaat 550

    agcgattctc ttcatgtatc tcctaatgcc ttacactact tggtttctga 600
```

tttgctctat ttcagcagat cttttctacc tactttgtgt gatcaaaaaa 650

gaagagttaa aacaacacat gtaaatgcct tttgatattt catgggaatg 700

cctctcattt aaaaatagaa ataaagcatt ttgttaaaaa ga 742

<210> 336
<211> 148
<212> PRT
<213> Homo sapiens

<400> 336

```
Met Ala Ala Ser Pro Ala Arg Pro Ala Val Leu Ala Leu Thr Gly
 1               5                  10                  15

Leu Ala Leu Leu Leu Leu Leu Cys Trp Gly Pro Gly Gly Ile Ser
                20                  25                  30

Gly Asn Lys Leu Lys Leu Met Leu Gln Lys Arg Glu Ala Pro Val
                35                  40                  45

Pro Thr Lys Thr Lys Val Ala Val Asp Glu Asn Lys Ala Lys Glu
                50                  55                  60

Phe Leu Gly Ser Leu Lys Arg Gln Lys Arg Gln Leu Trp Asp Arg
                65                  70                  75

Thr Arg Pro Glu Val Gln Gln Trp Tyr Gln Gln Phe Leu Tyr Met
                80                  85                  90

Gly Phe Asp Glu Ala Lys Phe Glu Asp Asp Ile Thr Tyr Trp Leu
                95                  100                 105

Asn Arg Asp Arg Asn Gly His Glu Tyr Tyr Gly Asp Tyr Tyr Gln
                110                 115                 120

Arg His Tyr Asp Glu Asp Ser Ala Ile Gly Pro Arg Ser Pro Tyr
                125                 130                 135

Gly Phe Arg His Gly Ala Ser Val Asn Tyr Asp Asp Tyr
                140                 145
```

<210> 337
<211> 1310
<212> DNA
<213> Homo sapiens

<400> 337

cggctcgagc ccgcccggaa gtgcccgagg ggccgcgatg gagctggggg 50

agccgggcgc tcggtagcgc ggcgggcaag gcaggcgcca tgaccctgat 100

tgaaggggtg ggtgatgagg tgaccgtcct tttctcggtg cttgcctgcc 150

ttctggtgct ggcccttgcc tgggtctcaa cgcacaccgc tgagggcggg 200

gacccactgc cccagccgtc agggacccca acgccatccc agcccagcgc 250

328

```
agccatggca gctaccgaca gcatgagagg ggaggcccca ggggcagaga 300

cccccagcct gagacacaga ggtcaagctg cacagccaga gcccagcacg 350

gggttcacag caacaccgcc agccccggac tccccgcagg agcccctcgt 400

gctacggctg aaattcctca atgattcaga gcaggtggcc agggcctggc 450

cccacgacac cattggctcc ttgaaaagga cccagtttcc cggccgggaa 500

cagcaggtgc gactcatcta ccaagggcag ctgctaggcg acgacaccca 550

gaccctgggc agccttcacc tccctcccaa ctgcgttctc cactgccacg 600

tgtccacgag agtcggtccc ccaaatcccc cctgcccgcc ggggtccgag 650

cccggcccct ccgggctgga aatcggcagc ctgctgctgc ccctgctgct 700

cctgctgttg ctgctgctct ggtactgcca gatccagtac cggcccttct 750

ttcccctgac cgccactctg ggcctggccg gcttcaccct gctcctcagt 800

ctcctggcct ttgccatgta ccgcccgtag tgcctccgcg ggcgcttggc 850

agcgtcgccg gcccctccgg accttgctcc ccgcgccgcg gcgggagctg 900

ctgcctgccc aggcccgcct ctccggcctg cctcttcccg ctgccctgga 950

gcccagccct gcgccgcaga ggactcccgg gactggcgga ggccccgccc 1000

tgcgaccgcc ggggctcggg gccacctccc ggggctgctg aacctcagcc 1050

cgcactggga gtgggctcct cggggtcggg catctgctgt cgctgcctcg 1100

gccccgggca gagccgggcc gccccggggg cccgtcttag tgttctgccg 1150

gaggacccag ccgcctccaa tccctgacag ctccttgggc tgagttgggg 1200

acgccaggtc ggtgggaggc tggtgaaggg gagcggggag gggcagagga 1250

gttccccgga acccgtgcag attaaagtaa ctgtgaagtt ttaaaaaaaa 1300

aaaaaaaaaa 1310
```

<210> 338
<211> 246
<212> PRT
<213> Homo sapiens

<400> 338

```
Met Thr Leu Ile Glu Gly Val Gly Asp Glu Val Thr Val Leu Phe
1               5                   10                  15

Ser Val Leu Ala Cys Leu Leu Val Leu Ala Leu Ala Trp Val Ser
                20                  25                  30

Thr His Thr Ala Glu Gly Gly Asp Pro Leu Pro Gln Pro Ser Gly
                35                  40                  45
```

329

```
Thr Pro Thr Pro Ser Gln Pro Ser Ala Ala Met Ala Ala Thr Asp
            50              55                      60

Ser Met Arg Gly Glu Ala Pro Gly Ala Glu Thr Pro Ser Leu Arg
            65              70                      75

His Arg Gly Gln Ala Ala Gln Pro Glu Pro Ser Thr Gly Phe Thr
            80              85                      90

Ala Thr Pro Pro Ala Pro Asp Ser Pro Gln Glu Pro Leu Val Leu
            95             100                     105

Arg Leu Lys Phe Leu Asn Asp Ser Glu Gln Val Ala Arg Ala Trp
           110             115                     120

Pro His Asp Thr Ile Gly Ser Leu Lys Arg Thr Gln Phe Pro Gly
           125             130                     135

Arg Glu Gln Gln Val Arg Leu Ile Tyr Gln Gly Gln Leu Leu Gly
           140             145                     150

Asp Asp Thr Gln Thr Leu Gly Ser Leu His Leu Pro Pro Asn Cys
           155             160                     165

Val Leu His Cys His Val Ser Thr Arg Val Gly Pro Pro Asn Pro
           170             175                     180

Pro Cys Pro Pro Gly Ser Glu Pro Gly Pro Ser Gly Leu Glu Ile
           185             190                     195

Gly Ser Leu Leu Leu Pro Leu Leu Leu Leu Leu Leu Leu Leu Leu
           200             205                     210

Trp Tyr Cys Gln Ile Gln Tyr Arg Pro Phe Phe Pro Leu Thr Ala
           215             220                     225

Thr Leu Gly Leu Ala Gly Phe Thr Leu Leu Leu Ser Leu Leu Ala
           230             235                     240

Phe Ala Met Tyr Arg Pro
           245
```

<210> 339
<211> 849
<212> DNA
<213> Homo sapiens

<400> 339

```
gagattggaa acagccaggt tggagcagtg agtgagtaag gaaacctggc 50

tgccctctcc agattcccca ggctctcaga gaagatcagc agaaagtctg 100

caagacccta agaaccatca gccctcagct gcacctcctc ccctccaagg 150

atgacaaagg cgctactcat ctatttggtc agcagctttc ttgccctaaa 200

tcaggccagc ctcatcagtc gctgtgactt ggcccaggtg ctgcagctgg 250
```

330

```
aggacttgga tgggtttgag ggttactccc tgagtgactg gctgtgcctg 300

gcttttgtgg aaagcaagtt caacatatca aagataaatg aaaatgcgga 350

tggaagcttt gactatggcc tcttccagat caacagccac tactggtgca 400

acgattataa gagttactcg gaaaaccttt gccacgtaga ctgtcaagat 450

ctgctgaatc ccaaccttct tgcaggcatc cactgcgcaa aaaggattgt 500

gtccggagca cggggggatga acaactgggt agaatggagg ttgcactgtt 550

caggccggcc actctcctac tggctgacag gatgccgcct gagatgaaac 600

agggtgcggg tgcaccgtgg agtcattcca agactcctgt cctcactcag 650

ggattcttca tttcttcttc ctactgcctc cacttcatgt tattttcttc 700

ccttcccatt tacaactaaa actgaccaga gccccaggaa taaatggttt 750

tcttggcttc ctccttactc ccatctggac ccagtcccct ggttcctgtc 800

tgttatttgt aaactgagga ccacaataaa gaaatcttta tatttatcg 849
```

<210> 340
<211> 148
<212> PRT
<213> Homo sapiens

<400> 340

```
Met Thr Lys Ala Leu Leu Ile Tyr Leu Val Ser Ser Phe Leu Ala
  1               5                  10                  15

Leu Asn Gln Ala Ser Leu Ile Ser Arg Cys Asp Leu Ala Gln Val
                20                  25                  30

Leu Gln Leu Glu Asp Leu Asp Gly Phe Glu Gly Tyr Ser Leu Ser
                35                  40                  45

Asp Trp Leu Cys Leu Ala Phe Val Glu Ser Lys Phe Asn Ile Ser
                50                  55                  60

Lys Ile Asn Glu Asn Ala Asp Gly Ser Phe Asp Tyr Gly Leu Phe
                65                  70                  75

Gln Ile Asn Ser His Tyr Trp Cys Asn Asp Tyr Lys Ser Tyr Ser
                80                  85                  90

Glu Asn Leu Cys His Val Asp Cys Gln Asp Leu Leu Asn Pro Asn
                95                  100                 105

Leu Leu Ala Gly Ile His Cys Ala Lys Arg Ile Val Ser Gly Ala
                110                 115                 120

Arg Gly Met Asn Asn Trp Val Glu Trp Arg Leu His Cys Ser Gly
                125                 130                 135

Arg Pro Leu Ser Tyr Trp Leu Thr Gly Cys Arg Leu Arg
```

331

<210> 341
<211> 23
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-23
<223> Synthetic construct.

<400> 341
ccctccaagg atgacaaagg cgc 23

<210> 342
<211> 29
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-29
<223> Synthetic construct.

<400> 342
ggtcagcagc tttcttgccc taaatcagg 29

<210> 343
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 343
atctcaggcg gcatcctgtc agcc 24

<210> 344
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 344
gtggatgcct gcaagaaggt tggg 24

<210> 345
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45
<223> Synthetic construct.

<400> 345
 agctttcttg ccctaaatca ggccagcctc atcagtcgct gtgac 45

<210> 346
<211> 2575
<212> DNA
<213> Homo sapiens

<400> 346
 tctgacctga ctggaagcgt ccaaagaggg acggctgtca gccctgcttg 50

 actgagaacc caccagctca tcccagacac ctcatagcaa cctatttata 100

 caaaggggga aagaaacacc tgagcagaat ggaatcatta tttttttccc 150

 aaggagaaaa ccggggtaaa gggagggaag caattcaatt tgaagtccct 200

 gtgaatgggc tttcagaagg caattaaaga aatccactca gagaggactt 250

 ggggtgaaac ttgggtcctg tggttttctg attgtaagtg gaagcaggtc 300

 ttgcacacgc tgttggcaaa tgtcaggacc aggttaagtg actggcagaa 350

 aaacttccag gtggaacaag caacccatgt tctgctgcaa gcttgaagga 400

 gcctggagcg ggagaaagct aacttgaaca tgacctgttg catttggcaa 450

 gttctagcaa catgctccta aggaagcgat acaggcacag accatgcaga 500

 ctccagttcc tcctgctgct cctgatgctg ggatgcgtcc tgatgatggt 550

 ggcgatgttg caccctcccc accacaccct gcaccagact gtcacagccc 600

 aagccagcaa gcacagccct gaagccaggt accgcctgga ctttggggaa 650

 tcccaggatt gggtactgga agctgaggat gagggtgaag agtacagccc 700

 tctggagggc ctgccaccct ttatctcact gcgggaggat cagctgctgg 750

 tggccgtggc cttaccccag gccagaagga accagagcca gggcaggaga 800

 ggtgggagct accgcctcat caagcagcca aggaggcagg ataaggaagc 850

 cccaaagagg gactgggggg ctgatgagga cggggaggtg tctgaagaag 900

 aggagttgac cccgttcagc ctggacccac gtggcctcca ggaggcactc 950

 agtgcccgca tcccctccca gagggctctg cccgaggtgc ggcacccact 1000

 gtgtctgcag cagcaccctc aggacagcct gcccacagcc agcgtcatcc 1050

 tctgtttcca tgatgaggcc tggtccactc tcctgcggac tgtacacagc 1100

```
atcctcgaca cagtgcccag ggccttcctg aaggagatca tcctcgtgga 1150

cgacctcagc cagcaaggac aactcaagtc tgctctcagc gaatatgtgg 1200

ccaggctgga gggggtgaag ttactcagga gcaacaagag gctgggtgcc 1250

atcagggccc ggatgctggg ggccaccaga gccaccgggg atgtgctcgt 1300

cttcatggat gcccactgcg agtgccaccc aggctggctg gagcccctcc 1350

tcagcagaat agctggtgac aggagccgag tggtatctcc ggtgatagat 1400

gtgattgact ggaagacttt ccagtattac ccctcaaagg acctgcagcg 1450

tggggtgttg gactggaagc tggatttcca ctgggaacct ttgccagagc 1500

atgtgaggaa ggccctccag tcccccataa gccccatcag gagccctgtg 1550

gtgcccggag aggtggtggc catggacaga cattacttcc aaaacactgg 1600

agcgtatgac tctcttatgt cgctgcgagg tggtgaaaac ctcgaactgt 1650

ctttcaaggc ctggctctgt ggtggctctg ttgaaatcct tccctgctct 1700

cgggtaggac acatctacca aaatcaggat tcccattccc ccctcgacca 1750

ggaggccacc ctgaggaaca gggttcgcat tgctgagacc tggctggggt 1800

cattcaaaga aaccttctac aagcatagcc cagaggcctt ctccttgagc 1850

aaggctgaga agccagactg catggaacgc ttgcagctgc aaaggagact 1900

gggttgtcgg acattccact ggtttctggc taatgtctac cctgagctgt 1950

acccatctga acccaggccc agtttctctg gaaagctcca caacactgga 2000

cttgggctct gtgcagactg ccaggcagaa ggggacatcc tgggctgtcc 2050

catggtgttg gctccttgca gtgacagccg gcagcaacag tacctgcagc 2100

acaccagcag gaaggagatt cactttggca gcccacagca cctgtgcttt 2150

gctgtcaggc aggagcaggt gattcttcag aactgcacgg aggaaggcct 2200

ggccatccac cagcagcact gggacttcca ggagaatggg atgattgtcc 2250

acattctttc tgggaaatgc atggaagctg tggtgcaaga aaacaataaa 2300

gatttgtacc tgcgtccgtg tgatggaaaa gcccgccagc agtggcgatt 2350

tgaccagata aatgctgtgg atgaacgatg aatgtcaatg tcagaaggaa 2400

aagagaattt tggccatcaa aatccagctc caagtgaacg taaagagctt 2450

atatatttca tgaagctgat cctttttgtgt gtgtgctcct tgtgttagga 2500

gagaaaaaag ctctatgaaa gaatatagga agtttctcct tttcacacct 2550
```

334

tatttcattg actgctggct gctta 2575

<210> 347
<211> 639
<212> PRT
<213> Homo sapiens

<400> 347

```
Met Leu Leu Arg Lys Arg Tyr Arg His Arg Pro Cys Arg Leu Gln
 1               5              10                      15

Phe Leu Leu Leu Leu Leu Met Leu Gly Cys Val Leu Met Met Val
                20              25                      30

Ala Met Leu His Pro Pro His His Thr Leu His Gln Thr Val Thr
                35              40                      45

Ala Gln Ala Ser Lys His Ser Pro Glu Ala Arg Tyr Arg Leu Asp
                50              55                      60

Phe Gly Glu Ser Gln Asp Trp Val Leu Glu Ala Glu Asp Glu Gly
                65              70                      75

Glu Glu Tyr Ser Pro Leu Glu Gly Leu Pro Pro Phe Ile Ser Leu
                80              85                      90

Arg Glu Asp Gln Leu Leu Val Ala Val Ala Leu Pro Gln Ala Arg
                95              100                     105

Arg Asn Gln Ser Gln Gly Arg Arg Gly Gly Ser Tyr Arg Leu Ile
                110             115                     120

Lys Gln Pro Arg Arg Gln Asp Lys Glu Ala Pro Lys Arg Asp Trp
                125             130                     135

Gly Ala Asp Glu Asp Gly Glu Val Ser Glu Glu Glu Leu Thr
                140             145                     150

Pro Phe Ser Leu Asp Pro Arg Gly Leu Gln Glu Ala Leu Ser Ala
                155             160                     165

Arg Ile Pro Leu Gln Arg Ala Leu Pro Glu Val Arg His Pro Leu
                170             175                     180

Cys Leu Gln Gln His Pro Gln Asp Ser Leu Pro Thr Ala Ser Val
                185             190                     195

Ile Leu Cys Phe His Asp Glu Ala Trp Ser Thr Leu Leu Arg Thr
                200             205                     210

Val His Ser Ile Leu Asp Thr Val Pro Arg Ala Phe Leu Lys Glu
                215             220                     225

Ile Ile Leu Val Asp Asp Leu Ser Gln Gln Gly Gln Leu Lys Ser
                230             235                     240

Ala Leu Ser Glu Tyr Val Ala Arg Leu Glu Gly Val Lys Leu Leu
                245             250                     255
```

```
Arg Ser Asn Lys Arg Leu Gly Ala Ile Arg Ala Arg Met Leu Gly
            260             265             270

Ala Thr Arg Ala Thr Gly Asp Val Leu Val Phe Met Asp Ala His
            275             280             285

Cys Glu Cys His Pro Gly Trp Leu Glu Pro Leu Leu Ser Arg Ile
            290             295             300

Ala Gly Asp Arg Ser Arg Val Val Ser Pro Val Ile Asp Val Ile
            305             310             315

Asp Trp Lys Thr Phe Gln Tyr Tyr Pro Ser Lys Asp Leu Gln Arg
            320             325             330

Gly Val Leu Asp Trp Lys Leu Asp Phe His Trp Glu Pro Leu Pro
            335             340             345

Glu His Val Arg Lys Ala Leu Gln Ser Pro Ile Ser Pro Ile Arg
            350             355             360

Ser Pro Val Val Pro Gly Glu Val Val Ala Met Asp Arg His Tyr
            365             370             375

Phe Gln Asn Thr Gly Ala Tyr Asp Ser Leu Met Ser Leu Arg Gly
            380             385             390

Gly Glu Asn Leu Glu Leu Ser Phe Lys Ala Trp Leu Cys Gly Gly
            395             400             405

Ser Val Glu Ile Leu Pro Cys Ser Arg Val Gly His Ile Tyr Gln
            410             415             420

Asn Gln Asp Ser His Ser Pro Leu Asp Gln Glu Ala Thr Leu Arg
            425             430             435

Asn Arg Val Arg Ile Ala Glu Thr Trp Leu Gly Ser Phe Lys Glu
            440             445             450

Thr Phe Tyr Lys His Ser Pro Glu Ala Phe Ser Leu Ser Lys Ala
            455             460             465

Glu Lys Pro Asp Cys Met Glu Arg Leu Gln Leu Gln Arg Arg Leu
            470             475             480

Gly Cys Arg Thr Phe His Trp Phe Leu Ala Asn Val Tyr Pro Glu
            485             490             495

Leu Tyr Pro Ser Glu Pro Arg Pro Ser Phe Ser Gly Lys Leu His
            500             505             510

Asn Thr Gly Leu Gly Leu Cys Ala Asp Cys Gln Ala Glu Gly Asp
            515             520             525

Ile Leu Gly Cys Pro Met Val Leu Ala Pro Cys Ser Asp Ser Arg
            530             535             540

Gln Gln Gln Tyr Leu Gln His Thr Ser Arg Lys Glu Ile His Phe
```

336

```
                545                      550                      555
    Gly Ser Pro Gln His Leu Cys Phe Ala Val Arg Gln Glu Gln Val
                    560                  565                  570
    Ile Leu Gln Asn Cys Thr Glu Glu Gly Leu Ala Ile His Gln Gln
                    575                  580                  585
    His Trp Asp Phe Gln Glu Asn Gly Met Ile Val His Ile Leu Ser
                    590                  595                  600
    Gly Lys Cys Met Glu Ala Val Val Gln Glu Asn Asn Lys Asp Leu
                    605                  610                  615
    Tyr Leu Arg Pro Cys Asp Gly Lys Ala Arg Gln Gln Trp Arg Phe
                    620                  625                  630
    Asp Gln Ile Asn Ala Val Asp Glu Arg
                    635
```

<210> 348
<211> 23
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-23
<223> Synthetic construct.

<400> 348
 ggagaggtgg tggccatgga cag 23

<210> 349
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 349
 ctgtcactgc aaggagccaa cacc 24

<210> 350
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45
<223> Synthetic construct.

<400> 350
 tatgtcgctg cgaggtggtg aaaacctcga actgtctttc aaggc 45

<210> 351
<211> 2524
<212> DNA
<213> Homo sapiens

<400> 351

```
cgccaagcat gcagtaaagg ctgaaaatct gggtcacagc tgaggaagac 50

ctcagacatg gagtccagga tgtggcctgc gctgctgctg tcccacctcc 100

tccctctctg gccactgctg ttgctgcccc tcccaccgcc tgctcagggc 150

tcttcatcct cccctcgaac cccaccagcc ccagcccgcc ccccgtgtgc 200

caggggaggc ccctcggccc cacgtcatgt gtgcgtgtgg gagcgagcac 250

ctccaccaag ccgatctcct cgggtcccaa gatcacgtcg gcaagtcctg 300

cctggcactg cacccccagc caccccatca ggctttgagg aggggccgcc 350

ctcatcccaa tacccctggg ctatcgtgtg gggtcccacc gtgtctcgag 400

aggatggagg ggaccccaac tctgccaatc ccggatttct ggactatggt 450

tttgcagccc ctcatgggct cgcaacccca caccccaact cagactccat 500

gcgaggtgat ggagatgggc ttatccttgg agaggcacct gccaccctgc 550

ggccattcct gttcggggc cgtggggaag gtgtggaccc ccagctctat 600

gtcacaatta ccatctccat catcattgtt ctcgtggcca ctggcatcat 650

cttcaagttc tgctgggacc gcagccagaa gcgacgcaga ccctcagggc 700

agcaaggtgc cctgaggcag gaggagagcc agcagccact gacagacctg 750

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cacccctgac catgaggagc cccgagggg accccggcct gggatgcccc 850

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tgggatggga gggcaaagag ggaaggcaac ttaggtcttc agagctgggg 950

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gccctggcc ctcccaaggg ggctggacca gctcctctct gggaggcacc 1050

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aactccaact ctgccctctt tggtttttc tcatgccacc ttgtctaaga 1150

caactctgcc ctcttaacct tgattccccc tctttgtctt gaacttcccc 1200

ttctattctg gcctacccct tggttcctga ctgtgccctt tccctcttcc 1250

tctcaggatt cccctggtga atctgtgatg cccccaatgt tggggtgcag 1300
```

338

```
ccaagcagga ggccaagggg ccggcacagc ccccatccca ctgagggtgg 1350

ggcagctgtg gggagctggg gccacagggg ctcctggctc ctgccccttg 1400

cacaccaccc ggaacactcc ccagccccac gggcaatcct atctgctcgc 1450

cctcctgcag gtggggggcct cacatatctg tgacttcggg tccctgtccc 1500

caccccttgtg cactcacatg aaagccttgc acactcacct ccaccttcac 1550

aggccatttg cacacgctcc tgcaccctct ccccgtccat accgctccgc 1600

tcagctgact ctcatgttct ctcgtctcac atttgcactc tctccttccc 1650

acattctgtg ctcagctcac tcagtggtca gcgtttcctg cacactttac 1700

ctctcatgtg cgtttcccgg cctgatgttg tggtggtgtg cggcgtgctc 1750

actctctccc tcatgaacac ccacccacct cgtttccgca gcccctgcgt 1800

gctgctccag aggtgggtgg gaggtgagct gggggctcct tgggccctca 1850

tcggtcatgg tctcgtccca ttccacacca tttgtttctc tgtctcccca 1900

tcctactcca aggatgccgg catcaccctg agggctcccc cttgggaatg 1950

gggtagtgag gccccagact tcaccccag cccactgcta aaatctgttt 2000

tctgacagat gggttttggg gagtcgcctg ctgcactaca tgagaaaggg 2050

actcccattt gcccttccct ttctcctaca gtccctttg tcttgtctgt 2100

cctggctgtc tgtgtgtgtg ccattctctg gacttcagag ccccctgagc 2150

cagtcctccc ttcccagcct ccctttgggc ctccctaact ccacctaggc 2200

tgccagggac cggagtcagc tggttcaagg ccatcgggag ctctgcctcc 2250

aagtctaccc ttcccttccc ggactccctc ctgtccctc ctttcctccc 2300

tccttccttc cactctcctt ccttttgctt ccctgccctt tcccctcct 2350

caggttcttc cctccttctc actggttttt ccaccttcct ccttcccttc 2400

ttccctggct cctaggctgt gatatatatt tttgtattat ctctttcttc 2450

ttcttgtggt gatcatcttg aattactgtg ggatgtaagt ttcaaaattt 2500

tcaaataaag cctttgcaag ataa 2524
```

<210> 352
<211> 243
<212> PRT
<213> Homo sapiens

<400> 352
```
Met Arg Pro Gln Gly Pro Ala Ala Ser Pro Gln Arg Leu Arg Gly
  1               5                  10                  15
```

Leu Leu Leu Leu Leu Leu Leu Gln Leu Pro Ala Pro Ser Ser Ala
                20   25   30

Ser Glu Ile Pro Lys Gly Lys Gln Lys Ala Gln Leu Arg Gln Arg
                35   40   45

Glu Val Val Asp Leu Tyr Asn Gly Met Cys Leu Gln Gly Pro Ala
                50   55   60

Gly Val Pro Gly Arg Asp Gly Ser Pro Gly Ala Asn Val Ile Pro
                65   70   75

Gly Thr Pro Gly Ile Pro Gly Arg Asp Gly Phe Lys Gly Glu Lys
                80   85   90

Gly Glu Cys Leu Arg Glu Ser Phe Glu Glu Ser Trp Thr Pro Asn
                95   100   105

Tyr Lys Gln Cys Ser Trp Ser Ser Leu Asn Tyr Gly Ile Asp Leu
                110   115   120

Gly Lys Ile Ala Glu Cys Thr Phe Thr Lys Met Arg Ser Asn Ser
                125   130   135

Ala Leu Arg Val Leu Phe Ser Gly Ser Leu Arg Leu Lys Cys Arg
                140   145   150

Asn Ala Cys Cys Gln Arg Trp Tyr Phe Thr Phe Asn Gly Ala Glu
                155   160   165

Cys Ser Gly Pro Leu Pro Ile Glu Ala Ile Ile Tyr Leu Asp Gln
                170   175   180

Gly Ser Pro Glu Met Asn Ser Thr Ile Asn Ile His Arg Thr Ser
                185   190   195

Ser Val Glu Gly Leu Cys Glu Gly Ile Gly Ala Gly Leu Val Asp
                200   205   210

Val Ala Ile Trp Val Gly Thr Cys Ser Asp Tyr Pro Lys Gly Asp
                215   220   225

Ala Ser Thr Gly Trp Asn Ser Val Ser Arg Ile Ile Ile Glu Glu
                230   235   240

Leu Pro Lys

<210> 353
<211> 480
<212> DNA
<213> Homo sapiens

<400> 353
 gttaaccagc gcagtcctcc gtgcgtcccg cccgccgctg ccctcactcc 50

 cggccaggat ggcatcctgt ctggccctgc gcatggcgct gctgctggtc 100

340

```
tccggggttc tggcccctgc ggtgctcaca gacgatgttc cacaggagcc 150

cgtgcccacg ctgtggaacg agccggccga gctgccgtcg ggagaaggcc 200

ccgtggagag caccagcccc ggccgggagc ccgtggacac cggtccccca 250

gcccccaccg tcgcgccagg acccgaggac agcaccgcgc aggagcggct 300

ggaccagggc ggcgggtcgc tggggcccgg cgctatcgcg gccatcgtga 350

tcgccgccct gctggccacc tgcgtggtgc tggcgctcgt ggtcgtcgcg 400

ctgagaaagt tttctgcctc ctgaagcgaa taaaggggcc gcgcccggcc 450

gcggcgcgac tcggcaaaaa aaaaaaaaaa 480
```

<210> 354
<211> 121
<212> PRT
<213> Homo sapiens

<400> 354

```
Met Ala Ser Cys Leu Ala Leu Arg Met Ala Leu Leu Leu Val Ser
 1               5                   10                  15

Gly Val Leu Ala Pro Ala Val Leu Thr Asp Asp Val Pro Gln Glu
                 20                  25                  30

Pro Val Pro Thr Leu Trp Asn Glu Pro Ala Glu Leu Pro Ser Gly
                 35                  40                  45

Glu Gly Pro Val Glu Ser Thr Ser Pro Gly Arg Glu Pro Val Asp
                 50                  55                  60

Thr Gly Pro Pro Ala Pro Thr Val Ala Pro Gly Pro Glu Asp Ser
                 65                  70                  75

Thr Ala Gln Glu Arg Leu Asp Gln Gly Gly Gly Ser Leu Gly Pro
                 80                  85                  90

Gly Ala Ile Ala Ala Ile Val Ile Ala Ala Leu Leu Ala Thr Cys
                 95                  100                 105

Val Val Leu Ala Leu Val Val Val Ala Leu Arg Lys Phe Ser Ala
                 110                 115                 120

Ser
```

<210> 355
<211> 2134
<212> DNA
<213> Homo sapiens

<400> 355

```
ggccgttggt tggtgcgcgg ctgaagggtg tggcgcgagc agcgtcgttg 50

gttggccggc ggcgggccgg gacgggcatg gccctgctgc tgtgcctggt 100
```

gtgcctgacg gcggcgctgg cccacggctg tctgcactgc cacagcaact 150

tctccaagaa gttctccttc taccgccacc atgtgaactt caagtcctgg 200

tgggtgggcg acatccccgt gtcaggggcg ctgctcaccg actggagcga 250

cgacacgatg aaggagctgc acctggccat ccccgccaag atcacccggg 300

agaagctgga ccaagtggcg acagcagtgt accagatgat ggatcagctg 350

taccagggga agatgtactt ccccgggtat ttccccaacg agctgcgaaa 400

catcttccgg gagcaggtgc acctcatcca gaacgccatc atcgaaaggc 450

acctggcacc aggcagctgg ggaggagggc agctctccag ggagggaccc 500

agcctagcac ctgaaggatc aatgccatca ccccgcgggg acctcccta 550

agtagccccc agaggcgctg ggagtgttgc caccgccctc ccctgaagtt 600

tgctccatct cacgctgggg gtcaacctgg gaccccttc cctccgggcc 650

atggacacac atacatgaaa accaggccgc atcgactgtc agcaccgctg 700

tggcatcttc cagtacgaga ccatctcctg caacaactgc acagactcgc 750

acgtcgcctg ctttggctat aactgcgagt agggctcagg catcacaccc 800

acccgtgcca gggccctact gtccctgggg tcccaggctc tccttggagg 850

gggctccccg ccttccacct ggctgtcatc gggtagggcg gggccgtggg 900

ttcaggggcg caccacttcc aagcctgtgt cccacaggtc ctcggcgcag 950

tggaagtcag ctgtccaggg cctcctgaac tacataaata actggcacaa 1000

gtaagtcccc tcctcaaacc aacacaggca gtgtgtgtat gtgagcacct 1050

cgtgggtgag tatgtgtggg gcacaggctg gctccctcag ctcccacgtc 1100

ctagaggggc tcccgaggag gtggaacctc aacccagctc tgcgcaggag 1150

gcggctgcag tccttttctc cctcaaaggt ctccgaccct cagctggagg 1200

cgggcatctt tcctaaaggg tccccatagg gtctggttcc accccatccc 1250

aggtctgtgg tcagagcctg ggagggttcc ctacgatggt taggggtgcc 1300

ccatggaggg gctgactgcc ccacattgcc tttcagacag gacacgagca 1350

tgaggtaagg ccgccctgac ctggacttca gggggagggg gtaaagggag 1400

agaggagggg ggctaggggg tcctctagat cagtgggggc actgcaggtg 1450

gggctctccc tatacctggg acacctgctg gatgtcacct ctgcaaccac 1500

acccatgtgg tggtttcatg aacagaccac gctcctctgc cttctcctgg 1550

342

```
cctgggacac acagagccac cccggccttg tgagtgaccc agagaaggga 1600

ggcctcggga gaaggggtgc tcgtaagcca acaccagcgt gccgcggcct 1650

gcacaccctt cggacatccc aggcacgagg gtgtcgtgga tgtggccaca 1700

cataggacca cacgtcccag ctgggaggag aggcctgggg cccccaggga 1750

gggaggcagg gggtggggga catggagagc tgaggcagcc tcgtctcccc 1800

gcagcctggt atcgccagcc ttaaggtgtc tggagccccc acacttggcc 1850

aacctgacct tggaagatgc tgctgagtgt ctcaagcagc actgacagca 1900

gctgggcctg ccccagggca acgtgggggc ggagactcag ctggacagcc 1950

cctgcctgtc actctggagc tgggctgctg ctgcctcagg accccctctc 2000

cgaccccgga cagagctgag ctggccaggg ccaggagggc gggagggagg 2050

gaatgggggt gggctgtgcg cagcatcagc gcctgggcag gtccgcagag 2100

ctgcgggatg tgattaaagt ccctgatgtt tctc 2134
```

<210> 356
<211> 157
<212> PRT
<213> Homo sapiens

<400> 356

```
Met Ala Leu Leu Leu Cys Leu Val Cys Leu Thr Ala Ala Leu Ala
  1               5                  10                  15

His Gly Cys Leu His Cys His Ser Asn Phe Ser Lys Lys Phe Ser
                 20                  25                  30

Phe Tyr Arg His His Val Asn Phe Lys Ser Trp Trp Val Gly Asp
                 35                  40                  45

Ile Pro Val Ser Gly Ala Leu Leu Thr Asp Trp Ser Asp Asp Thr
                 50                  55                  60

Met Lys Glu Leu His Leu Ala Ile Pro Ala Lys Ile Thr Arg Glu
                 65                  70                  75

Lys Leu Asp Gln Val Ala Thr Ala Val Tyr Gln Met Met Asp Gln
                 80                  85                  90

Leu Tyr Gln Gly Lys Met Tyr Phe Pro Gly Tyr Phe Pro Asn Glu
                 95                  100                 105

Leu Arg Asn Ile Phe Arg Glu Gln Val His Leu Ile Gln Asn Ala
                 110                 115                 120

Ile Ile Glu Arg His Leu Ala Pro Gly Ser Trp Gly Gly Gly Gln
                 125                 130                 135

Leu Ser Arg Glu Gly Pro Ser Leu Ala Pro Glu Gly Ser Met Pro
```

343

Ser Pro Arg Gly Asp Leu Pro
                        155

<210> 357
<211> 1536
<212> DNA
<213> Homo sapiens

<400> 357
agcaggagca ggagagggac aatggaagct gccccgtcca ggttcatgtt 50

cctcttattt ctcctcacgt gtgagctggc tgcagaagtt gctgcagaag 100

ttgagaaatc ctcagatggt cctggtgctg cccaggaacc cacgtggctc 150

acagatgtcc cagctgccat ggaattcatt gctgccactg aggtggctgt 200

cataggcttc ttccaggatt tagaaatacc agcagtgccc atactccata 250

gcatggtgca aaaattccca ggcgtgtcat ttgggatcag cactgattct 300

gaggttctga cacactacaa catcactggg aacaccatct gcctctttcg 350

cctggtagac aatgaacaac tgaatttaga ggacgaagac attgaaagca 400

ttgatgccac caaattgagc cgtttcattg agatcaacag cctccacatg 450

gtgacagagt acaaccctgt gactgtgatt gggttattca acagcgtaat 500

tcagattcat ctcctcctga taatgaacaa ggcctcccca gagtatgaag 550

agaacatgca cagataccag aaggcagcca agctcttcca ggggaagatt 600

ctctttattc tggtggacag tggtatgaaa gaaaatggga aggtgatatc 650

attttcaaa ctaaaggagt ctcaactgcc agctttggca atttaccaga 700

ctctagatga cgagtgggat acactgccca cagcagaagt ttccgtagag 750

catgtgcaaa acttttgtga tggattccta agtggaaaat tgttgaaaga 800

aaatcgtgaa tcagaaggaa agactccaaa ggtggaactc tgacttctcc 850

ttggaactac atatggccaa gtatctactt tatgcaaagt aaaaaggcac 900

aactcaaatc tcagagacac taaacaacag gatcactagg cctgccaacc 950

acacacacac gcacgtgcac acacgcacgc acgcgtgcac acacacacgc 1000

gcacacacac acacacacag agcttcattt cctgtcttaa aatctcgttt 1050

tctcttcttc cttctttttaa atttcatatc ctcactccct atccaatttc 1100

cttcttatcg tgcattcata ctctgtaagc ccatctgtaa cacacctaga 1150

tcaaggcttt aagagactca ctgtgatgcc tctatgaaag agaggcattc 1200

```
ctagagaaag attgttccaa tttgtcattt aatatcaagt ttgtatactg 1250

cacatgactt acacacaaca tagttcctgc tcttttaagg ttacctaagg 1300

gttgaaactc taccttcttt cataagcaca tgtccgtctc tgactcagga 1350

tcaaaaacca aaggatggtt ttaaacacct ttgtgaaatt gtctttttgc 1400

cagaagttaa aggctgtctc caagtccctg aactcagcag aaatagacca 1450

tgtgaaaact ccatgcttgg ttagcatctc caactcccta tgtaaatcaa 1500

caacctgcat aataaataaa aggcaatcat gttata 1536
```

<210> 358
<211> 273
<212> PRT
<213> Homo sapiens

<400> 358

```
Met Glu Ala Ala Pro Ser Arg Phe Met Phe Leu Leu Phe Leu Leu
 1               5                  10                  15

Thr Cys Glu Leu Ala Ala Glu Val Ala Ala Glu Val Glu Lys Ser
                20                  25                  30

Ser Asp Gly Pro Gly Ala Ala Gln Glu Pro Thr Trp Leu Thr Asp
                35                  40                  45

Val Pro Ala Ala Met Glu Phe Ile Ala Ala Thr Glu Val Ala Val
                50                  55                  60

Ile Gly Phe Phe Gln Asp Leu Glu Ile Pro Ala Val Pro Ile Leu
                65                  70                  75

His Ser Met Val Gln Lys Phe Pro Gly Val Ser Phe Gly Ile Ser
                80                  85                  90

Thr Asp Ser Glu Val Leu Thr His Tyr Asn Ile Thr Gly Asn Thr
                95                 100                 105

Ile Cys Leu Phe Arg Leu Val Asp Asn Glu Gln Leu Asn Leu Glu
               110                 115                 120

Asp Glu Asp Ile Glu Ser Ile Asp Ala Thr Lys Leu Ser Arg Phe
               125                 130                 135

Ile Glu Ile Asn Ser Leu His Met Val Thr Glu Tyr Asn Pro Val
               140                 145                 150

Thr Val Ile Gly Leu Phe Asn Ser Val Ile Gln Ile His Leu Leu
               155                 160                 165

Leu Ile Met Asn Lys Ala Ser Pro Glu Tyr Glu Glu Asn Met His
               170                 175                 180

Arg Tyr Gln Lys Ala Ala Lys Leu Phe Gln Gly Lys Ile Leu Phe
               185                 190                 195
```

345

```
Ile Leu Val Asp Ser Gly Met Lys Glu Asn Gly Lys Val Ile Ser
                200                 205             210

Phe Phe Lys Leu Lys Glu Ser Gln Leu Pro Ala Leu Ala Ile Tyr
                215                 220             225

Gln Thr Leu Asp Asp Glu Trp Asp Thr Leu Pro Thr Ala Glu Val
                230                 235             240

Ser Val Glu His Val Gln Asn Phe Cys Asp Gly Phe Leu Ser Gly
                245                 250             255

Lys Leu Leu Lys Glu Asn Arg Glu Ser Glu Gly Lys Thr Pro Lys
                260                 265             270

Val Glu Leu
```

<210> 359
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 359
 ccagcagtgc ccatactcca tagc 24

<210> 360
<211> 20
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-20
<223> Synthetic construct.

<400> 360
 tgacgagtgg gatacactgc 20

<210> 361
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 361
 gctctacgga aacttctgct gtgg 24

<210> 362

<211> 50
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 362
attcccaggc gtgtcatttg ggatcagcac tgattctgag gttctgacac 50

<210> 363
<211> 1777
<212> DNA
<213> Homo sapiens

<400> 363
ggagagccgc ggctgggacc ggagtgggga gcgcggcgtg gaggtgccac 50

ccggcgcggg tggcggagag atcagaagcc tcttccccaa gccgagccaa 100

cctcagcggg gacccgggct cagggacgcg gcggcggcgg cggcgactgc 150

agtggctgga cgatggcagc gtccgccgga gccggggcgg tgattgcagc 200

cccagacagc cggcgctggc tgtggtcggt gctggcggcg gcgcttgggc 250

tcttgacagc tggagtatca gccttggaag tatatacgcc aaaagaaatc 300

ttcgtggcaa atggtacaca agggaagctg acctgcaagt tcaagtctac 350

tagtacgact ggcgggttga cctcagtctc ctggagcttc cagccagagg 400

gggccgacac tactgtgtcg tttttccact actcccaagg gcaagtgtac 450

cttgggaatt atccaccatt taaagacaga atcagctggg ctggagacct 500

tgacaagaaa gatgcatcaa tcaacataga aaatatgcag tttatacaca 550

atggcaccta tatctgtgat gtcaaaaacc ctcctgacat cgttgtccag 600

cctggacaca ttaggctcta tgtcgtagaa aaagagaatt tgcctgtgtt 650

tccagtttgg gtagtggtgg gcatagttac tgctgtggtc ctaggtctca 700

ctctgctcat cagcatgatt ctggctgtcc tctatagaag gaaaaactct 750

aaacgggatt acactggctg cagtacatca gagagtttgt caccagttaa 800

gcaggctcct cggaagtccc cctccgacac tgagggtctt gtaaagagtc 850

tgccttctgg atctcaccag ggcccagtca tatatgcaca gttagaccac 900

tccggcggac atcacagtga caagattaac aagtcagagt ctgtggtgta 950

tgcggatatc cgaaagaatt aagagaatac ctagaacata tcctcagcaa 1000

347

```
gaaacaaaac caaactggac tctcgtgcag aaaatgtagc ccattaccac 1050

atgtagcctt ggagacccag gcaaggacaa gtacacgtgt actcacagag 1100

ggagagaaag atgtgtacaa aggatatgta taaatattct atttagtcat 1150

cctgatatga ggagccagtg ttgcatgatg aaaagatggt atgattctac 1200

atatgtaccc attgtcttgc tgttttgta ctttcttttc aggtcattta 1250

caattgggag atttcagaaa cattcctttc accatcattt agaaatggtt 1300

tgccttaatg gagacaatag cagatcctgt agtatttcca gtagacatgg 1350

ccttttaatc taagggctta agactgatta gtcttagcat ttactgtagt 1400

tggaggatgg agatgctatg atggaagcat acccagggtg gcctttagca 1450

cagtatcagt accatttatt tgtctgccgc ttttaaaaaa tacccattgg 1500

ctatgccact tgaaaacaat ttgagaagtt tttttgaagt ttttctcact 1550

aaaatatggg gcaattgtta gccttacatg ttgtgtagac ttactttaag 1600

tttgcaccct tgaaatgtgt catatcaatt tctggattca taatagcaag 1650

attagcaaag gataaatgcc gaaggtcact tcattctgga cacagttgga 1700

tcaatactga ttaagtagaa aatccaagct ttgcttgaga acttttgtaa 1750

cgtggagagt aaaaagtatc ggtttta 1777
```

<210> 364
<211> 269
<212> PRT
<213> Homo sapiens

<400> 364
```
Met Ala Ala Ser Ala Gly Ala Gly Ala Val Ile Ala Ala Pro Asp
 1               5               · 10                      15

Ser Arg Arg Trp Leu Trp Ser Val Leu Ala Ala Ala Leu Gly Leu
                20                  25                      30

Leu Thr Ala Gly Val Ser Ala Leu Glu Val Tyr Thr Pro Lys Glu
                35                  40                      45

Ile Phe Val Ala Asn Gly·Thr Gln Gly Lys Leu Thr Cys Lys Phe
                50                  55                      60

Lys Ser Thr Ser Thr Thr Gly Gly Leu Thr Ser Val Ser Trp Ser
                65                  70                      75

Phe Gln Pro Glu Gly Ala Asp Thr Thr Val Ser Phe Phe His Tyr
                80                  85                      90

Ser Gln Gly Gln Val Tyr Leu Gly Asn Tyr Pro Pro Phe Lys Asp
                95                 100                     105
```

348

```
Arg Ile Ser Trp Ala Gly Asp Leu Asp Lys Lys Asp Ala Ser Ile
              110               115           120
Asn Ile Glu Asn Met Gln Phe Ile His Asn Gly Thr Tyr Ile Cys
              125               130           135
Asp Val Lys Asn Pro Pro Asp Ile Val Val Gln Pro Gly His Ile
              140               145           150
Arg Leu Tyr Val Val Glu Lys Glu Asn Leu Pro Val Phe Pro Val
              155               160           165
Trp Val Val Val Gly Ile Val Thr Ala Val Val Leu Gly Leu Thr
              170               175           180
Leu Leu Ile Ser Met Ile Leu Ala Val Leu Tyr Arg Arg Lys Asn
              185               190           195
Ser Lys Arg Asp Tyr Thr Gly Cys Ser Thr Ser Glu Ser Leu Ser
              200               205           210
Pro Val Lys Gln Ala Pro Arg Lys Ser Pro Ser Asp Thr Glu Gly
              215               220           225
Leu Val Lys Ser Leu Pro Ser Gly Ser His Gln Gly Pro Val Ile
              230               235           240
Tyr Ala Gln Leu Asp His Ser Gly Gly His His Ser Asp Lys Ile
              245               250           255
Asn Lys Ser Glu Ser Val Val Tyr Ala Asp Ile Arg Lys Asn
              260               265
```

<210> 365
<211> 1321
<212> DNA
<213> Homo sapiens

<400> 365

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gccggctgtg cagagacgcc atgtaccggc tcctgtcagc agtgactgcc 50

cgggctgccg cccccggggg cttggcctca agctgcggac gacgcgcggt 100

ccatcagcgc gccgggctgc cgcctctcgg ccacggctgg gtcgggggcc 150

tcgggctggg gctggggctg gcgctcgggg tgaagctggc aggtgggctg 200

aggggcgcgg ccccggcgca gtcccccgcg gccccgacc ctgaggcgtc 250

gcctctggcc gagccgccac aggagcagtc cctcgccccg tggtctccgc 300

agaccccggc gccgccctgc tccaggtgct tcgccagagc catcgagagc 350

agccgcgacc tgctgcacag gatcaaggat gaggtgggcg caccgggcat 400

agtggttgga gtttctgtag atggaaaaga agtctggtca gaaggtttag 450

gttatgctga tgttgagaac cgtgtaccat gtaaaccaga gacagttatg 500
```

```
cgaattgcta gcatcagcaa aagtctcacc atggttgctc ttgccaaatt 550

gtgggaagca gggaaactgg atcttgatat tccagtacaa cattatgttc 600

ccgaattccc agaaaaagaa tatgaaggtg aaaaggtttc tgtcacaaca 650

agattactga tttcccattt aagtggaatt cgtcattatg aaaaggacat 700

aaaaaaggtg aaagaagaga agcttataa agccttgaag atgatgaaag 750

agaatgttgc atttgagcaa gaaaagaag gcaaaagtaa tgaaaagaat 800

gattttacta aatttaaaac agagcaggag aatgaagcca atgccggaa 850

ttcaaaacct ggcaagaaaa agaatgattt tgaacaaggc gaattatatt 900

tgagagaaaa gtttgaaaat tcaattgaat ccctaagatt atttaaaaat 950

gatcctttgt tcttcaaacc tggtagtcag ttttttgtatt caacttttgg 1000

ctataccccta ctggcagcca tagtagagag agcttcagga tgtaaatatt 1050

tggactatat gcagaaaata ttccatgact tggatatgct gacgactgtg 1100

caggaagaaa acgagccagt gatttacaat agagcaaggt aaatgaatac 1150

cttctgctgt gtctagctat atcgcatctt aacactattt tattaattaa 1200

aagtcaaatt ttctttgttt ccattccaaa atcaacctgc cacatttttgg 1250

gagctttttct acatgtctgt tttctcatct gtaaagtgaa ggaagtaaaa 1300

catgtttata aagtaaaaaa a 1321
```

```
<210> 366
<211> 373
<212> PRT
<213> Homo sapiens

<400> 366
Met Tyr Arg Leu Leu Ser Ala Val Thr Ala Arg Ala Ala Ala Pro
1               5                   10                  15

Gly Gly Leu Ala Ser Ser Cys Gly Arg Arg Gly Val His Gln Arg
                20                  25                  30

Ala Gly Leu Pro Pro Leu Gly His Gly Trp Val Gly Gly Leu Gly
                35                  40                  45

Leu Gly Leu Gly Leu Ala Leu Gly Val Lys Leu Ala Gly Gly Leu
                50                  55                  60

Arg Gly Ala Ala Pro Ala Gln Ser Pro Ala Ala Pro Asp Pro Glu
                65                  70                  75

Ala Ser Pro Leu Ala Glu Pro Pro Gln Glu Gln Ser Leu Ala Pro
                80                  85                  90
```

```
Trp Ser Pro Gln Thr Pro Ala Pro Pro Cys Ser Arg Cys Phe Ala
             95          100                     105

Arg Ala Ile Glu Ser Ser Arg Asp Leu Leu His Arg Ile Lys Asp
            110          115                     120

Glu Val Gly Ala Pro Gly Ile Val Val Gly Val Ser Val Asp Gly
            125          130                     135

Lys Glu Val Trp Ser Glu Gly Leu Gly Tyr Ala Asp Val Glu Asn
            140          145                     150

Arg Val Pro Cys Lys Pro Glu Thr Val Met Arg Ile Ala Ser Ile
            155          160                     165

Ser Lys Ser Leu Thr Met Val Ala Leu Ala Lys Leu Trp Glu Ala
            170          175                     180

Gly Lys Leu Asp Leu Asp Ile Pro Val Gln His Tyr Val Pro Glu
            185          190                     195

Phe Pro Glu Lys Glu Tyr Glu Gly Glu Lys Val Ser Val Thr Thr
            200          205                     210

Arg Leu Leu Ile Ser His Leu Ser Gly Ile Arg His Tyr Glu Lys
            215          220                     225

Asp Ile Lys Lys Val Lys Glu Glu Lys Ala Tyr Lys Ala Leu Lys
            230          235                     240

Met Met Lys Glu Asn Val Ala Phe Glu Gln Glu Lys Glu Gly Lys
            245          250                     255

Ser Asn Glu Lys Asn Asp Phe Thr Lys Phe Lys Thr Glu Gln Glu
            260          265                     270

Asn Glu Ala Lys Cys Arg Asn Ser Lys Pro Gly Lys Lys Lys Asn
            275          280                     285

Asp Phe Glu Gln Gly Glu Leu Tyr Leu Arg Glu Lys Phe Glu Asn
            290          295                     300

Ser Ile Glu Ser Leu Arg Leu Phe Lys Asn Asp Pro Leu Phe Phe
            305          310                     315

Lys Pro Gly Ser Gln Phe Leu Tyr Ser Thr Phe Gly Tyr Thr Leu
            320          325                     330

Leu Ala Ala Ile Val Glu Arg Ala Ser Gly Cys Lys Tyr Leu Asp
            335          340                     345

Tyr Met Gln Lys Ile Phe His Asp Leu Asp Met Leu Thr Thr Val
            350          355                     360

Gln Glu Glu Asn Glu Pro Val Ile Tyr Asn Arg Ala Arg
            365          370
```

<210> 367

```
<211> 30
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-30
<223> Synthetic construct.

<400> 367
 tggaaaagaa gtctggtcag aaggtttagg 30

<210> 368
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-25
<223> Synthetic construct.

<400> 368
 catttggctt cattctcctg ctctg 25

<210> 369
<211> 28
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-28
<223> Synthetic construct.

<400> 369
 aaaacctcag aacaactcat tttgcacc 28

<210> 370
<211> 41
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-41
<223> Synthetic construct.

<400> 370
 gtctcaccat ggttgctctt gccaaattgt gggaagcagg g 41

<210> 371
<211> 1150
<212> DNA
<213> Homo sapiens

<400> 371
 gtgacactat agaagagcta tgacgtcgca tgcacgcgta cgtaagctcg 50
```

```
gaattcggct cgaggctggt gggaagaagc cgagatggcg gcagccagcg 100

ctggggcaac ccggctgctc ctgctcttgc tgatggcggt agcagcgccc 150

agtcgagccc ggggcagcgg ctgccgggcc gggactggtg cgcgaggggc 200

tggggcggaa ggtcgagagg gcgaggcctg tggcacggtg gggctgctgc 250

tggagcactc atttgagatc gatgacagtg ccaacttccg gaagcggggc 300

tcactgctct ggaaccagca ggatggtacc ttgtccctgt cacagcggca 350

gctcagcgag gaggagcggg gccgactccg ggatgtggca gccctgaatg 400

gcctgtaccg ggtccggatc ccaaggcgac ccggggccct ggatggcctg 450

gaagctggtg gctatgtctc ctcctttgtc cctgcgtgct ccctggtgga 500

gtcgcacctg tcggaccagc tgaccctgca cgtggatgtg gccggcaacg 550

tggtgggcgt gtcggtggtg acgcaccccg ggggctgccg gggccatgag 600

gtggaggacg tggacctgga gctgttcaac acctcggtgc agctgcagcc 650

gcccaccaca gcccccaggcc ctgagacggc ggccttcatt gagcgcctgg 700

agatggaaca ggcccagaag gccaagaacc cccaggagca gaagtccttc 750

ttcgccaaat actggatgta catcattccc gtcgtcctgt tcctcatgat 800

gtcaggagcg ccagacaccg ggggccaggg tggggggtggg ggtgggggtg 850

gtggtggggg tagtggcctt tgctgtgtgc caccctccct gtaagtctat 900

ttaaaaacat cgacgataca ttgaaatgtg tgaacgtttt gaaaagctac 950

agcttccagc agccaaaagc aactgttgtt ttggcaagac ggtcctgatg 1000

tacaagcttg attgaaattc actgctcact tgatacgtta ttcagaaacc 1050

caaggaatgg ctgtccccat cctcatgtgg ctgtgtggag ctcagctgtg 1100

ttgtgtggca gtttattaaa ctgtccccca gatcgacacg caaaaaaaaa 1150
```

<210> 372
<211> 269
<212> PRT
<213> Homo sapiens

<400> 372

```
Met Ala Ala Ala Ser Ala Gly Ala Thr Arg Leu Leu Leu Leu Leu
 1               5                  10                  15

Leu Met Ala Val Ala Ala Pro Ser Arg Ala Arg Gly Ser Gly Cys
                20                  25                  30

Arg Ala Gly Thr Gly Ala Arg Gly Ala Gly Ala Glu Gly Arg Glu
                35                  40                  45
```

```
Gly Glu Ala Cys Gly Thr Val Gly Leu Leu Leu Glu His Ser Phe
              50                  55                      60

Glu Ile Asp Asp Ser Ala Asn Phe Arg Lys Arg Gly Ser Leu Leu
              65                  70                      75

Trp Asn Gln Gln Asp Gly Thr Leu Ser Leu Ser Gln Arg Gln Leu
              80                  85                      90

Ser Glu Glu Glu Arg Gly Arg Leu Arg Asp Val Ala Ala Leu Asn
              95                  100                     105

Gly Leu Tyr Arg Val Arg Ile Pro Arg Pro Gly Ala Leu Asp
              110                 115                     120

Gly Leu Glu Ala Gly Gly Tyr Val Ser Ser Phe Val Pro Ala Cys
              125                 130                     135

Ser Leu Val Glu Ser His Leu Ser Asp Gln Leu Thr Leu His Val
              140                 145                     150

Asp Val Ala Gly Asn Val Val Gly Val Ser Val Val Thr His Pro
              155                 160                     165

Gly Gly Cys Arg Gly His Glu Val Glu Asp Val Asp Leu Glu Leu
              170                 175                     180

Phe Asn Thr Ser Val Gln Leu Gln Pro Pro Thr Thr Ala Pro Gly
              185                 190                     195

Pro Glu Thr Ala Ala Phe Ile Glu Arg Leu Glu Met Glu Gln Ala
              200                 205                     210

Gln Lys Ala Lys Asn Pro Gln Glu Gln Lys Ser Phe Phe Ala Lys
              215                 220                     225

Tyr Trp Met Tyr Ile Ile Pro Val Val Leu Phe Leu Met Met Ser
              230                 235                     240

Gly Ala Pro Asp Thr Gly Gly Gln Gly Gly Gly Gly Gly Gly Gly
              245                 250                     255

Gly Gly Gly Gly Ser Gly Leu Cys Cys Val Pro Pro Ser Leu
              260                 265
```

<210> 373
<211> 1706
<212> DNA
<213> Homo sapiens

<400> 373

```
 ggagcgctgc tggaacccga gccggagccg gagccacagc gggggagggtg 50

 gcctggcggc ctggagccgg acgtgtccgg ggcgtccccg cagaccgggg 100

 cagcaggtcg tccggggggcc caccatgctg gtgactgcct accttgcttt 150

 tgtaggcctc ctggcctcct gcctgggggct ggaactgtca agatgccggg 200
```

354

355

ctctgtgtta ctcccattta gaaaataaac acttttaaat gatcaaaaaa 1700

aaaaaa 1706

<210> 374
<211> 450
<212> PRT
<213> Homo sapiens

<400> 374

```
Met Leu Val Thr Ala Tyr Leu Ala Phe Val Gly Leu Leu Ala Ser
 1               5                  10                  15

Cys Leu Gly Leu Glu Leu Ser Arg Cys Arg Ala Lys Pro Pro Gly
                20                  25                  30

Arg Ala Cys Ser Asn Pro Ser Phe Leu Arg Phe Gln Leu Asp Phe
                35                  40                  45

Tyr Gln Val Tyr Phe Leu Ala Leu Ala Ala Asp Trp Leu Gln Ala
                50                  55                  60

Pro Tyr Leu Tyr Lys Leu Tyr Gln His Tyr Tyr Phe Leu Glu Gly
                     65                  70                  75

Gln Ile Ala Ile Leu Tyr Val Cys Gly Leu Ala Ser Thr Val Leu
                80                  85                  90

Phe Gly Leu Val Ala Ser Ser Leu Val Asp Trp Leu Gly Arg Lys
                95                  100                 105

Asn Ser Cys Val Leu Phe Ser Leu Thr Tyr Ser Leu Cys Cys Leu
                110                 115                 120

Thr Lys Leu Ser Gln Asp Tyr Phe Val Leu Leu Val Gly Arg Ala
                125                 130                 135

Leu Gly Gly Leu Ser Thr Ala Leu Leu Phe Ser Ala Phe Glu Ala
                140                 145                 150

Trp Tyr Ile His Glu His Val Glu Arg His Asp Phe Pro Ala Glu
                155                 160                 165

Trp Ile Pro Ala Thr Phe Ala Arg Ala Ala Phe Trp Asn His Val
                170                 175                 180

Leu Ala Val Val Ala Gly Val Ala Ala Glu Ala Val Ala Ser Trp
                185                 190                 195

Ile Gly Leu Gly Pro Val Ala Pro Phe Val Ala Ala Ile Pro Leu
                200                 205                 210

Leu Ala Leu Ala Gly Ala Leu Ala Leu Arg Asn Trp Gly Glu Asn
                215                 220                 225

Tyr Asp Arg Gln Arg Ala Phe Ser Arg Thr Cys Ala Gly Gly Leu
                230                 235                 240
```

```
Arg Cys Leu Leu Ser Asp Arg Arg Val Leu Leu Leu Gly Thr Ile
                245                 250                 255
Gln Ala Leu Phe Glu Ser Val Ile Phe Ile Phe Val Phe Leu Trp
                260                 265                 270
Thr Pro Val Leu Asp Pro His Gly Ala Pro Leu Gly Ile Ile Phe
                275                 280                 285
Ser Ser Phe Met Ala Ala Ser Leu Leu Gly Ser Ser Leu Tyr Arg
                290                 295                 300
Ile Ala Thr Ser Lys Arg Tyr His Leu Gln Pro Met His Leu Leu
                305                 310                 315
Ser Leu Ala Val Leu Ile Val Val Phe Ser Leu Phe Met Leu Thr
                320                 325                 330
Phe Ser Thr Ser Pro Gly Gln Glu Ser Pro Val Glu Ser Phe Ile
                335                 340                 345
Ala Phe Leu Leu Ile Glu Leu Ala Cys Gly Leu Tyr Phe Pro Ser
                350                 355                 360
Met Ser Phe Leu Arg Arg Lys Val Ile Pro Glu Thr Glu Gln Ala
                365                 370                 375
Gly Val Leu Asn Trp Phe Arg Val Pro Leu His Ser Leu Ala Cys
                380                 385                 390
Leu Gly Leu Leu Val Leu His Asp Ser Asp Arg Lys Thr Gly Thr
                395                 400                 405
Arg Asn Met Phe Ser Ile Cys Ser Ala Val Met Val Met Ala Leu
                410                 415                 420
Leu Ala Val Val Gly Leu Phe Thr Val Val Arg His Asp Ala Glu
                425                 430                 435
Leu Arg Val Pro Ser Pro Thr Glu Glu Pro Tyr Ala Pro Glu Leu
                440                 445                 450
```

<210> 375
<211> 1098
<212> DNA
<213> Artificial

<400> 375
```
gcgacgcgcg gcggggcggc gagaggaaac gcggcgccgg gccgggcccg 50

gccctggaga tggtccccgg cgccgcgggc tggtgttgtc tcgtgctctg 100

gctccccgcg tgcgtcgcgg cccacggctt ccgtatccat gattatttgt 150

actttcaagt gctgagtcct ggggacattc gatacatctt cacagccaca 200

cctgccaagg actttggtgg tatctttcac acaaggtatg agcagattca 250
```

357

```
ccttgtcccc gctgaacctc cagaggcctg cggggaactc agcaacggtt 300

tcttcatcca ggaccagatt gctctggtgg agagggggg ctgctccttc 350

ctctccaaga ctcgggtggt ccaggagcac ggcgggcggg cggtgatcat 400

ctctgacaac gcagttgaca atgacagctt ctacgtggag atgatccagg 450

acagtaccca gcgcacagct gacatccccg ccctcttcct gctcggccga 500

gacggctaca tgatccgccg ctctctggaa cagcatgggc tgccatgggc 550

catcatttcc atcccagtca atgtcaccag catccccacc tttgagctgc 600

tgcaaccgcc ctggaccttc tggtagaaga gtttgtccca cattccagcc 650

ataagtgact ctgagctggg aaggggaaac ccaggaattt tgctacttgg 700

aatttggaga tagcatctgg ggacaagtgg agccaggtag aggaaaaggg 750

tttgggcgtt gctaggctga aagggaagcc acaccactgg ccttcccttc 800

cccagggccc ccaagggtgt ctcatgctac aagaagaggc aagagacagg 850

ccccagggct tctggctaga acccgaaaca aaaggagctg aaggcaggtg 900

gcctgagagc catctgtgac ctgtcacact cacctggctc cagcctcccc 950

tacccagggt ctctgcacag tgaccttcac agcagttgtt ggagtggttt 1000

aaagagctgg tgtttgggga ctcaataaac cctcactgac tttttagcaa 1050

taaagcttct catcagggtt gcaaaaaaaa aaaaaaaaaa aaaaaaaa 1098
```

<210> 376
<211> 188
<212> PRT
<213> Homo sapiens

<400> 376

```
Met Val Pro Gly Ala Ala Gly Trp Cys Cys Leu Val Leu Trp Leu
1               5               10              15

Pro Ala Cys Val Ala Ala His Gly Phe Arg Ile His Asp Tyr Leu
                20              25              30

Tyr Phe Gln Val Leu Ser Pro Gly Asp Ile Arg Tyr Ile Phe Thr
                35              40              45

Ala Thr Pro Ala Lys Asp Phe Gly Gly Ile Phe His Thr Arg Tyr
                50              55              60

Glu Gln Ile His Leu Val Pro Ala Glu Pro Glu Ala Cys Gly
                65              70              75

Glu Leu Ser Asn Gly Phe Phe Ile Gln Asp Gln Ile Ala Leu Val
                80              85              90
```

358

```
Glu Arg Gly Gly Cys Ser Phe Leu Ser Lys Thr Arg Val Val Gln
                95                  100                 105

Glu His Gly Gly Arg Ala Val Ile Ile Ser Asp Asn Ala Val Asp
            110                 115                 120

Asn Asp Ser Phe Tyr Val Glu Met Ile Gln Asp Ser Thr Gln Arg
            125                 130                 135

Thr Ala Asp Ile Pro Ala Leu Phe Leu Leu Gly Arg Asp Gly Tyr
            140                 145                 150

Met Ile Arg Arg Ser Leu Glu Gln His Gly Leu Pro Trp Ala Ile
            155                 160                 165

Ile Ser Ile Pro Val Asn Val Thr Ser Ile Pro Thr Phe Glu Leu
            170                 175                 180

Leu Gln Pro Pro Trp Thr Phe Trp
            185
```

<210> 377
<211> 496
<212> DNA
<213> Artificial

<220>
<221> unsure
<222> 396
<223> unknown base

<400> 377

```
tctgcctcca ctgctctgtg ctgggatcat ggaacttgca ctgctgtgtg 50

ggctggtggt gatggctggt gtgattccaa tccagggcgg gatcctgaac 100

ctgaacaaga tggtcaagca agtgactggg aaaatgccca tcctctccta 150

ctggccctac ggctgtcact gcggactagg tggcagaggc caacccaaag 200

atgccacgga ctggtgctgc cagacccatg actgctgcta tgaccacctg 250

aagacccagg ggtgcggcat ctacaaggac aacaacaaaa gcagcataca 300

ttgtatggat ttatctcaac gctattgttt aatggctgtg tttaatgtga 350

tctatctgga aaatgaggac tccgaataaa aagctattac tawttnaaaa 400

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 450

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 496
```

<210> 378
<211> 116
<212> PRT
<213> Homo sapiens

<400> 378

```
Met Glu Leu Ala Leu Leu Cys Gly Leu Val Val Met Ala Gly Val
 1               5                  10                  15

Ile Pro Ile Gln Gly Gly Ile Leu Asn Leu Asn Lys Met Val Lys
                20                  25                  30

Gln Val Thr Gly Lys Met Pro Ile Leu Ser Tyr Trp Pro Tyr Gly
                35                  40                  45

Cys His Cys Gly Leu Gly Gly Arg Gly Gln Pro Lys Asp Ala Thr
                50                  55                  60

Asp Trp Cys Cys Gln Thr His Asp Cys Cys Tyr Asp His Leu Lys
                65                  70                  75

Thr Gln Gly Cys Gly Ile Tyr Lys Asp Asn Asn Lys Ser Ser Ile
                80                  85                  90

His Cys Met Asp Leu Ser Gln Arg Tyr Cys Leu Met Ala Val Phe
                95                  100                 105

Asn Val Ile Tyr Leu Glu Asn Glu Asp Ser Glu
                110                 115
```

<210> 379
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 379
 ctgcctccac tgctctgtgc tggg 24

<210> 380
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 380
 cagagcagtg gatgttcccc tggg 24

<210> 381
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45

<223> Synthetic construct.

<400> 381
 ctgaacaaga tggtcaagca agtgactggg aaaatgccca tcctc 45

<210> 382
<211> 764
<212> DNA
<213> Homo sapiens

<400> 382
 ctcgcttctt ccttctggat gggggcccag ggggcccagg agagtataaa 50

 ggcgatgtgg agggtgcccg gcacaaccag acgcccagtc acaggcgaga 100

 gccctgggat gcaccggcca gaggccatgc tgctgctgct cacgcttgcc 150

 ctcctggggg gccccacctg ggcagggaag atgtatggcc ctggaggagg 200

 caagtatttc agcaccactg aagactacga ccatgaaatc acaggctgc 250

 gggtgtctgt aggtcttctc ctggtgaaaa gtgtccaggt gaaacttgga 300

 gactcctggg acgtgaaact gggagcctta ggtgggaata cccaggaagt 350

 caccctgcag ccaggcgaat acatcacaaa agtctttgtc gccttccaag 400

 ctttcctccg gggtatggtc atgtacacca gcaaggaccg ctatttctat 450

 tttgggaagc ttgatggcca gatctcctct gcctacccca gccaagaggg 500

 gcaggtgctg gtgggcatct atggccagta tcaactcctt ggcatcaaga 550

 gcattggctt tgaatggaat tatccactag aggagccgac cactgagcca 600

 ccagttaatc tcacatactc agcaaactca cccgtgggtc gctagggtgg 650

 ggtatggggc catccgagct gaggccatct gtgtggtggt ggctgatggt 700

 actggagtaa ctgagtcggg acgctgaatc tgaatccacc aataaataaa 750

 gcttctgcag aaaa 764

<210> 383
<211> 178
<212> PRT
<213> Homo sapiens

<400> 383
 Met His Arg Pro Glu Ala Met Leu Leu Leu Leu Thr Leu Ala Leu
 1   5   10   15

 Leu Gly Gly Pro Thr Trp Ala Gly Lys Met Tyr Gly Pro Gly Gly
                 20   25   30

 Gly Lys Tyr Phe Ser Thr Thr Glu Asp Tyr Asp His Glu Ile Thr
                 35   40   45

361

```
Gly Leu Arg Val Ser Val Gly Leu Leu Leu Val Lys Ser Val Gln
            50                  55                  60

Val Lys Leu Gly Asp Ser Trp Asp Val Lys Leu Gly Ala Leu Gly
            65                  70                  75

Gly Asn Thr Gln Glu Val Thr Leu Gln Pro Gly Glu Tyr Ile Thr
            80                  85                  90

Lys Val Phe Val Ala Phe Gln Ala Phe Leu Arg Gly Met Val Met
            95                  100                 105

Tyr Thr Ser Lys Asp Arg Tyr Phe Tyr Phe Gly Lys Leu Asp Gly
            110                 115                 120

Gln Ile Ser Ser Ala Tyr Pro Ser Gln Glu Gly Gln Val Leu Val
            125                 130                 135

Gly Ile Tyr Gly Gln Tyr Gln Leu Leu Gly Ile Lys Ser Ile Gly
            140                 145                 150

Phe Glu Trp Asn Tyr Pro Leu Glu Glu Pro Thr Thr Glu Pro Pro
            155                 160                 165

Val Asn Leu Thr Tyr Ser Ala Asn Ser Pro Val Gly Arg
            170                 175
```

<210> 384
<211> 2379
<212> DNA
<213> Homo sapiens

<400> 384
```
gctgagcgtg tgcgcggtac ggggctctcc tgccttctgg gctccaacgc 50

agctctgtgg ctgaactggg tgctcatcac gggaactgct gggctatgga 100

atacagatgt ggcagctcag gtagccccaa attgcctgga agaatacatc 150

atgtttttcg ataagaagaa attgtaggat ccagtttttt ttttaaccgc 200

cccctcccca cccccaaaa aaactgtaaa gatgcaaaaa cgtaatatcc 250

atgaagatcc tattacctag gaagattttg atgttttgct gcgaatgcgg 300

tgttgggatt tatttgttct tggagtgttc tgcgtggctg gcaaagaata 350

atgttccaaa atcggtccat ctcccaaggg gtccaatttt tcttcctggg 400

tgtcagcgag ccctgactca ctacagtgca gctgacaggg gctgtcatgc 450

aactggcccc taagccaaag caaaagacct aaggacgacc tttgaacaat 500

acaaaggatg ggtttcaatg taattaggct actgagcgga tcagctgtag 550

cactggttat agcccccact gtcttactga caatgctttc ttctgccgaa 600

cgaggatgcc ctaagggctg taggtgtgaa ggcaaaatgg tatattgtga 650
```

362

363

```
ttgaactctg gtgactatca agggaacgcg atgcccccc tccccttccc 2150

tctccctctc actttggtgg caagatcctt ccttgtccgt tttagtgcat 2200

tcataatact ggtcattttc ctctcataca taatcaaccc attgaaattt 2250

aaataccaca atcaatgtga agcttgaact ccggtttaat ataataccta 2300

ttgtataaga cccttactg attccattaa tgtcgcattt gttttaagat 2350

aaaacttctt tcataggtaa aaaaaaaaa 2379
```

<210> 385
<211> 513
<212> PRT
<213> Homo sapiens

<400> 385

```
Met Gly Phe Asn Val Ile Arg Leu Leu Ser Gly Ser Ala Val Ala
 1               5                  10                  15

Leu Val Ile Ala Pro Thr Val Leu Leu Thr Met Leu Ser Ser Ala
                20                  25                  30

Glu Arg Gly Cys Pro Lys Gly Cys Arg Cys Glu Gly Lys Met Val
                35                  40                  45

Tyr Cys Glu Ser Gln Lys Leu Gln Glu Ile Pro Ser Ser Ile Ser
                50                  55                  60

Ala Gly Cys Leu Gly Leu Ser Leu Arg Tyr Asn Ser Leu Gln Lys
                65                  70                  75

Leu Lys Tyr Asn Gln Phe Lys Gly Leu Asn Gln Leu Thr Trp Leu
                80                  85                  90

Tyr Leu Asp His Asn His Ile Ser Asn Ile Asp Glu Asn Ala Phe
                95                  100                 105

Asn Gly Ile Arg Arg Leu Lys Glu Leu Ile Leu Ser Ser Asn Arg
                110                 115                 120

Ile Ser Tyr Phe Leu Asn Asn Thr Phe Arg Pro Val Thr Asn Leu
                125                 130                 135

Arg Asn Leu Asp Leu Ser Tyr Asn Gln Leu His Ser Leu Gly Ser
                140                 145                 150

Glu Gln Phe Arg Gly Leu Arg Lys Leu Leu Ser Leu His Leu Arg
                155                 160                 165

Ser Asn Ser Leu Arg Thr Ile Pro Val Arg Ile Phe Gln Asp Cys
                170                 175                 180

Arg Asn Leu Glu Leu Leu Asp Leu Gly Tyr Asn Arg Ile Arg Ser
                185                 190                 195

Leu Ala Arg Asn Val Phe Ala Gly Met Ile Arg Leu Lys Glu Leu
```

364

```
                200                      205                      210
His Leu Glu His Asn Gln Phe Ser Lys Leu Asn Leu Ala Leu Phe
                215                      220                      225
Pro Arg Leu Val Ser Leu Gln Asn Leu Tyr Leu Gln Trp Asn Lys
                230                      235                      240
Ile Ser Val Ile Gly Gln Thr Met Ser Trp Thr Trp Ser Ser Leu
                245                      250                      255
Gln Arg Leu Asp Leu Ser Gly Asn Glu Ile Glu Ala Phe Ser Gly
                260                      265                      270
Pro Ser Val Phe Gln Cys Val Pro Asn Leu Gln Arg Leu Asn Leu
                275                      280                      285
Asp Ser Asn Lys Leu Thr Phe Ile Gly Gln Glu Ile Leu Asp Ser
                290                      295                      300
Trp Ile Ser Leu Asn Asp Ile Ser Leu Ala Gly Asn Ile Trp Glu
                305                      310                      315
Cys Ser Arg Asn Ile Cys Ser Leu Val Asn Trp Leu Lys Ser Phe
                320                      325                      330
Lys Gly Leu Arg Glu Asn Thr Ile Ile Cys Ala Ser Pro Lys Glu
                335                      340                      345
Leu Gln Gly Val Asn Val Ile Asp Ala Val Lys Asn Tyr Ser Ile
                350                      355                      360
Cys Gly Lys Ser Thr Thr Glu Arg Phe Asp Leu Ala Arg Ala Leu
                365                      370                      375
Pro Lys Pro Thr Phe Lys Pro Lys Leu Pro Arg Pro Lys His Glu
                380                      385                      390
Ser Lys Pro Pro Leu Pro Pro Thr Val Gly Ala Thr Glu Pro Gly
                395                      400                      405
Pro Glu Thr Asp Ala Asp Ala Glu His Ile Ser Phe His Lys Ile
                410                      415                      420
Ile Ala Gly Ser Val Ala Leu Phe Leu Ser Val Leu Val Ile Leu
                425                      430                      435
Leu Val Ile Tyr Val Ser Trp Lys Arg Tyr Pro Ala Ser Met Lys
                440                      445                      450
Gln Leu Gln Gln Arg Ser Leu Met Arg Arg His Arg Lys Lys Lys
                455                      460                      465
Arg Gln Ser Leu Lys Gln Met Thr Pro Ser Thr Gln Glu Phe Tyr
                470                      475                      480
Val Asp Tyr Lys Pro Thr Asn Thr Glu Thr Ser Glu Met Leu Leu
                485                      490                      495
```

365

```
        Asn Gly Thr Gly Pro Cys Thr Tyr Asn Lys Ser Gly Ser Arg Glu
                    500                     505                 510

        Cys Glu Val


        <210> 386
        <211> 24
        <212> DNA
        <213> Artificial

        <220>
        <221> Artificial Sequence
        <222> 1-24
        <223> Synthetic construct.

        <400> 386
         ctgggatctg aacagtttcg gggc 24

        <210> 387
        <211> 24
        <212> DNA
        <213> Artificial

        <220>
        <221> Artificial Sequence
        <222> 1-24
        <223> Synthetic construct.

        <400> 387
         ggtccccagg acatggtctg tccc 24

        <210> 388
        <211> 48
        <212> DNA
        <213> Artificial

        <220>
        <221> Artificial Sequence
        <222> 1-48
        <223> Synthetic construct.

        <400> 388
         gctgagttta catttacggt ctaactccct gagaaccatc cctgtgcg 48

        <210> 389
        <211> 1449
        <212> DNA
        <213> Homo sapiens

        <400> 389
         agttctgaga aagaaggaaa taaacacagg caccaaacca ctatcctaag 50

         ttgactgtcc tttaaatatg tcaagatcca gactttttcag tgtcacctca 100

         gcgatctcaa cgatagggat cttgtgtttg ccgctattcc agttggtgct 150

         ctcggaccta ccatgcgaag aagatgaaat gtgtgtaaat tataatgacc 200
```

```
aacaccctaa tggctggtat atctggatcc tcctgctgct ggttttggtg 250

gcagctcttc tctgtggagc tgtggtcctc tgcctccagt gctggctgag 300

gagaccccga attgattctc acaggcgcac catggcagtt tttgctgttg 350

gagacttgga ctctatttat gggacagaag cagctgtgag tccaactgtt 400

ggaattcacc ttcaaactca aacccctgac ctatatcctg ttcctgctcc 450

atgttttggc cctttaggct ccccacctcc atatgaagaa attgtaaaaa 500

caacctgatt ttaggtgtgg attatcaatt taaagtatta acgacatctg 550

taattccaaa acatcaaatt taggaatagt tatttcagtt gttggaaatg 600

tccagagatc tattcatata gtctgaggaa ggacaattcg acaaaagaat 650

ggatgttgga aaaaattttg gtcatggaga tgtttaaata gtaaagtagc 700

aggctttttga tgtgtcactg ctgtatcata cttttatgct acacaaccaa 750

attaatgctt ctccactagt atccaaacag gcaacaatta ggtgctggaa 800

gtagtttcca tcacatttag gactccactg cagtatacag cacaccattt 850

tctgctttaa actctttcct agcatggggt ccataaaaat tattataatt 900

taacaatagc ccaagccgag aatccaacat gtccagaacc agaaccagaa 950

agatagtatt tgaatgaagg tgaggggaga gagtaggaaa aagaaaagtt 1000

tggagttgaa gggtaaagga taaatgaaga ggaaaaggaa aagattacaa 1050

gtctcagcaa aaacaagagg ttttatgccc caacctgaag aggaagaaat 1100

tgtagataga aggtgaagga gattgctgaa gatatagagc acatataatg 1150

ccaacacggg gagaaaagaa aatttcccct tttacagtaa tgaatgtggc 1200

ctccatagtc catagtgttt ctctggagcc tcagggcttg gcatttattg 1250

cagcatcatg ctaagaacct tcggcatagg tatctgttcc catgaggact 1300

gcagaagtag caatgagaca tcttcaagtg gcattttggc agtggccatc 1350

agcaggggga cagacaaaaa catccatcac agatgacata tgatcttcag 1400

ctgacaaatt tgttgaacaa aacaataaac atcaatagat atctaaaaa 1449
```

<210> 390
<211> 146
<212> PRT
<213> Homo sapiens

<400> 390
```
 Met Ser Arg Ser Arg Leu Phe Ser Val Thr Ser Ala Ile Ser Thr
  1               5                  10                  15
```

```
Ile Gly Ile Leu Cys Leu Pro Leu Phe Gln Leu Val Leu Ser Asp
                20                      25                  30

Leu Pro Cys Glu Glu Asp Glu Met Cys Val Asn Tyr Asn Asp Gln
                35                      40                  45

His Pro Asn Gly Trp Tyr Ile Trp Ile Leu Leu Leu Leu Val Leu
                50                      55                  60

Val Ala Ala Leu Leu Cys Gly Ala Val Val Leu Cys Leu Gln Cys
                65                      70                  75

Trp Leu Arg Arg Pro Arg Ile Asp Ser His Arg Arg Thr Met Ala
                80                      85                  90

Val Phe Ala Val Gly Asp Leu Asp Ser Ile Tyr Gly Thr Glu Ala
                95                      100                 105

Ala Val Ser Pro Thr Val Gly Ile His Leu Gln Thr Gln Thr Pro
                110                     115                 120

Asp Leu Tyr Pro Val Pro Ala Pro Cys Phe Gly Pro Leu Gly Ser
                125                     130                 135

Pro Pro Pro Tyr Glu Glu Ile Val Lys Thr Thr
                140                     145
```

```
<210> 391
<211> 26
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-26
<223> Synthetic construct.

<400> 391
 cttttcagtg tcacctcagc gatctc 26

<210> 392
<211> 23
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-23
<223> Synthetic construct.

<400> 392
 ccaaaacatg gagcaggaac agg 23

<210> 393
<211> 47
<212> DNA
<213> Artificial
```

<220>
<221> Artificial Sequence
<222> 1-47
<223> Synthetic construct.

<400> 393
 ccagttggtg ctctcggacc taccatgcga agaagatgaa atgtgtg 47

<210> 394
<211> 2340
<212> DNA
<213> Homo sapiens

<400> 394
 gagcggagta aaatctccac aagctgggaa caaacctcgt cccaactccc 50

 acccaccggc gtttctccag ctcgatctgg aggctgcttc gccagtgtgg 100

 gacgcagctg acgcccgctt attagctctc gctgcgtcgc cccggctcag 150

 aagctccgtg gcggcggcga ccgtgacgag aagcccacgg ccagctcagt 200

 tctcttctac tttgggagag agagaaagtc agatgcccct tttaaactcc 250

 ctcttcaaaa ctcatctcct gggtgactga gttaatagag tggatacaac 300

 cttgctgaag atgaagaata tacaatattg aggatatttt tttctttttt 350

 ttttcaagtc ttgatttgtg gcttacctca agttaccatt tttcagtcaa 400

 gtctgtttgt ttgcttcttc agaaatgttt tttacaatct caagaaaaaa 450

 tatgtcccag aaaattgagtt tactgttgct tgtatttgga ctcatttggg 500

 gattgatgtt actgcactat acttttcaac aaccaagaca tcaaagcagt 550

 gtcaagttac gtgagcaaat actagactta agcaaaagat atgttaaagc 600

 tctagcagag gaaaataaga acacagtgga tgtcgagaac ggtgcttcta 650

 tggcaggata tgcggatctg aaaagaacaa ttgctgtcct tctggatgac 700

 attttgcaac gattggtgaa gctggagaac aaagttgact atattgttgt 750

 gaatggctca gcagccaaca ccaccaatgg tactagtggg aatttggtgc 800

 cagtaaccac aaataaaaga acgaatgtct cgggcagtat cagatagcag 850

 ttgaaaatca ccttgtgctg ctccatccac tgtggattat atcctatggc 900

 agaaaagctt tataattgct ggcttaggac agagcaatac tttacaataa 950

 aagctctaca cattttcaag gagtatgctg gattcatgga actctaattc 1000

 tgtacataaa aattttaaag ttatttgttt gctttcaggc aagtctgttc 1050

 aatgctgtac tatgtcctta aagagaattt ggtaacttgg ttgatgtggt 1100

369

```
aagcagatag gtgagttttg tataaatctt ttgtgtttga gatcaagctg 1150

aaatgaaaac actgaaaaac atggattcat ttctataaca catttattta 1200

agtatataac acgttttttg dacaagtgaa gaatgtttaa tcattctgtc 1250

atttgttctc aatagatgta actgttagac tacggctatt tgaaaaaatg 1300

tgcttattgt actatatttt gttattccaa ttatgagcag agaaaggaaa 1350

tataatgttg aaaataatgt tttgaaatca tgacccaaag aatgtattga 1400

tttgcactat ccttcagaat aactgaaggt taattattgt atatttttaa 1450

aaattacact tataagagta taatcttgaa atgggtagca gccactgtcc 1500

attacctatc gtaaacattg gggcaattta ataacagcat taaaatagtt 1550

gtaaactcta atcttatact tattgaagaa taaaagatat ttttatgatg 1600

agagtaacaa taaagtattc atgatttttc acatacatga atgttcattt 1650

aaaagtttaa tcctttgagt gtctatgcta tcaggaaagc acattatttc 1700

catatttggg ttaattttgc ttttattata ttggtctagg aggaagggac 1750

tttggagaat ggaactcttg aggactttag ccaggtgtat ataataaagg 1800

tacttttgtg ctgcattaaa ttgcttggaa agtgttaaca ttatattata 1850

taagagtatc ctttatgaaa ttttgaattt gtataacaga tgcattagat 1900

attcatttta tataatggcc acttaaaata agaacattta aaatataaac 1950

tatgaagatt gactatcttt tcaggaaaaa agctgtatat agcacaggga 2000

accctaatct tgggtaattc tagtataaaa caaattatac ttttatttaa 2050

atttcccttg tagcaaatct aattgccaca tggtgcccta tatttcatag 2100

tatttattct ctatagtaac tgcttaagtg cagctagctt ctagatttag 2150

actatataga atttagatat tgtattgttc gtcattataa tatgctacca 2200

catgtagcaa taattacaat attttattaa aataaatatg tgaaatattg 2250

tttcatgaaa gacagatttc caaatctctc ttctcttctc tgtactgtct 2300

acctttatgt gaagaaatta attatatgcc attgccaggt 2340
```

<210> 395
<211> 140
<212> PRT
<213> Homo sapiens

<400> 395
```
Met Phe Phe Thr Ile Ser Arg Lys Asn Met Ser Gln Lys Leu Ser
 1               5                  10                  15
```

```
Leu Leu Leu Leu Val Phe Gly Leu Ile Trp Gly Leu Met Leu Leu
             20                  25                      30

His Tyr Thr Phe Gln Gln Pro Arg His Gln Ser Ser Val Lys Leu
             35                  40                      45

Arg Glu Gln Ile Leu Asp Leu Ser Lys Arg Tyr Val Lys Ala Leu
             50                  55                      60

Ala Glu Glu Asn Lys Asn Thr Val Asp Val Glu Asn Gly Ala Ser
             65                  70                      75

Met Ala Gly Tyr Ala Asp Leu Lys Arg Thr Ile Ala Val Leu Leu
             80                  85                      90

Asp Asp Ile Leu Gln Arg Leu Val Lys Leu Glu Asn Lys Val Asp
             95                  100                     105

Tyr Ile Val Val Asn Gly Ser Ala Ala Asn Thr Thr Asn Gly Thr
             110                 115                     120

Ser Gly Asn Leu Val Pro Val Thr Thr Asn Lys Arg Thr Asn Val
             125                 130                     135

Ser Gly Ser Ile Arg
             140
```

<210> 396
<211> 2639
<212> DNA
<213> Homo sapiens

<400> 396

```
cgcggccggg ccgccggggt gagcgtgccg aggcggctgt ggcgcaggct 50

tccagccccc accatgccgt ggcccctgct gctgctgctg ccgtgagtg 100

gggcccagac aacccggcca tgcttccccg ggtgccaatg cgaggtggag 150

accttcggcc ttttcgacag cttcagcctg actcgggtgg attgtagcgg 200

cctgggcccc cacatcatgc cggtgcccat ccctctggac acagcccact 250

tggacctgtc ctccaaccgg ctggagatgg tgaatgagtc ggtgttggcg 300

gggccgggct acacgacgtt ggctggcctg gatctcagcc acaacctgct 350

caccagcatc tcacccactg ccttctcccg ccttcgctac ctggagtcgc 400

ttgacctcag ccacaatggc ctgacagccc tgccagccga gagcttcacc 450

agctcacccc tgagcgacgt gaaccttagc cacaaccagc tccgggaggt 500

ctcagtgtct gccttcacga cgcacagtca gggccgggca ctacacgtgg 550

acctctccca caacctcatt caccgcctcg tgccccaccc cacgagggcc 600

ggcctgcctg cgcccaccat tcagagcctg aacctggcct ggaaccggct 650
```

371

```
ccatgccgtg cccaacctcc gagacttgcc cctgcgctac ctgagcctgg 700

atgggaaccc tctagctgtc attggtccgg gtgccttcgc ggggctggga 750

ggccttacac acctgtctct ggccagcctg cagaggctcc ctgagctggc 800

gcccagtggc ttccgtgagc taccgggcct gcaggtcctg gacctgtcgg 850

gcaacccaaa gcttaactgg gcaggagctg aggtgttttc aggcctgagc 900

tccctgcagg agctggacct ttcgggcacc aacctggtgc ccctgcctga 950

ggcgctgctc ctccacctcc cggcactgca gagcgtcagc gtgggccagg 1000

atgtgcggtg ccggcgcctg gtgcgggagg gcacctaccc ccggaggcct 1050

ggctccagcc ccaaggtgcc cctgcactgc gtagacaccc gggaatctgc 1100

tgccaggggc cccaccatct tgtgacaaat ggtgtggccc agggccacat 1150

aacagactgc tgtcctgggc tgcctcaggt cccgagtaac ttatgttcaa 1200

tgtgccaaca ccagtgggga gcccgcaggc ctatgtggca gcgtcaccac 1250

aggagttgtg ggcctaggag aggctttgga cctgggagcc acacctagga 1300

gcaaagtctc acccctttgt ctacgttgct tccccaaacc atgagcagag 1350

ggacttcgat gccaaaccag actcgggtcc cctcctgctt cccttcccca 1400

cttatccccc aagtgccttc cctcatgcct gggccggcct gacccgcaat 1450

gggcagaggg tgggtgggac cccctgctgc agggcagagt tcaggtccac 1500

tgggctgagt gtccccttgg gcccatggcc cagtcactca ggggcgagtt 1550

tcttttctaa catagccctt tctttgccat gaggccatga ggcccgcttc 1600

atccttttct atttccctag aaccttaatg gtagaaggaa ttgcaaagaa 1650

tcaagtccac ccttctcatg tgacagatgg ggaaactgag gccttgagaa 1700

ggaaaaaggc taatctaagt tcctgcgggc agtggcatga ctggagcaca 1750

gcctcctgcc tcccagcccg gacccaatgc actttcttgt ctcctctaat 1800

aagccccacc ctccccgcct gggctcccct tgctgccctt gcctgttccc 1850

cattagcaca ggagtagcag cagcaggaca ggcaagagcc tcacaagtgg 1900

gactctgggc ctctgaccag ctgtgcggca tgggctaagt cactctgccc 1950

ttcggagcct ctggaagctt agggcacatt ggttccagcc tagccagttt 2000

ctcaccctgg gttggggtcc cccagcatcc agactggaaa cctacccatt 2050

ttcccctgag catcctctag atgctgcccc aaggagttgc tgcagttctg 2100
```

372

```
gagcctcatc tggctgggat ctccaagggg cctcctggat tcagtcccca 2150

ctggccctga gcacgacagc ccttcttacc ctcccaggaa tgccgtgaaa 2200

ggagacaagg tctgcccgac ccatgtctat gctctacccc cagggcagca 2250

tctcagcttc cgaaccctgg gctgtttcct tagtcttcat tttataaaag 2300

ttgttgcctt tttaacggag tgtcactttc aaccggcctc ccctacccct 2350

gctggccggg gatggagaca tgtcatttgt aaaagcagaa aaaggttgca 2400

tttgttcact tttgtaatat tgtcctgggc ctgtgttggg gtgttggggg 2450

aagctgggca tcagtggcca catgggcatc aggggctggc cccacagaga 2500

ccccacaggg cagtgagctc tgtcttcccc cacctgccta gcccatcatc 2550

tatctaaccg gtccttgatt taataaacac tataaaggt ttaaaaaaaa 2600

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaa 2639
```

<210> 397
<211> 353
<212> PRT
<213> Homo sapiens

<400> 397

```
Met Pro Trp Pro Leu Leu Leu Leu Leu Ala Val Ser Gly Ala Gln
 1               5                  10                  15

Thr Thr Arg Pro Cys Phe Pro Gly Cys Gln Cys Glu Val Glu Thr
                20                  25                  30

Phe Gly Leu Phe Asp Ser Phe Ser Leu Thr Arg Val Asp Cys Ser
                35                  40                  45

Gly Leu Gly Pro His Ile Met Pro Val Pro Ile Pro Leu Asp Thr
                50                  55                  60

Ala His Leu Asp Leu Ser Ser Asn Arg Leu Glu Met Val Asn Glu
                65                  70                  75

Ser Val Leu Ala Gly Pro Gly Tyr Thr Thr Leu Ala Gly Leu Asp
                80                  85                  90

Leu Ser His Asn Leu Leu Thr Ser Ile Ser Pro Thr Ala Phe Ser
                95                  100                 105

Arg Leu Arg Tyr Leu Glu Ser Leu Asp Leu Ser His Asn Gly Leu
                110                 115                 120

Thr Ala Leu Pro Ala Glu Ser Phe Thr Ser Ser Pro Leu Ser Asp
                125                 130                 135

Val Asn Leu Ser His Asn Gln Leu Arg Glu Val Ser Val Ser Ala
                140                 145                 150
```

373

```
Phe Thr Thr His Ser Gln Gly Arg Ala Leu His Val Asp Leu Ser
             155                 160                 165

His Asn Leu Ile His Arg Leu Val Pro His Pro Thr Arg Ala Gly
             170                 175                 180

Leu Pro Ala Pro Thr Ile Gln Ser Leu Asn Leu Ala Trp Asn Arg
             185                 190                 195

Leu His Ala Val Pro Asn Leu Arg Asp Leu Pro Leu Arg Tyr Leu
             200                 205                 210

Ser Leu Asp Gly Asn Pro Leu Ala Val Ile Gly Pro Gly Ala Phe
             215                 220                 225

Ala Gly Leu Gly Gly Leu Thr His Leu Ser Leu Ala Ser Leu Gln
             230                 235                 240

Arg Leu Pro Glu Leu Ala Pro Ser Gly Phe Arg Glu Leu Pro Gly
             245                 250                 255

Leu Gln Val Leu Asp Leu Ser Gly Asn Pro Lys Leu Asn Trp Ala
             260                 265                 270

Gly Ala Glu Val Phe Ser Gly Leu Ser Ser Leu Gln Glu Leu Asp
             275                 280                 285

Leu Ser Gly Thr Asn Leu Val Pro Leu Pro Glu Ala Leu Leu Leu
             290                 295                 300

His Leu Pro Ala Leu Gln Ser Val Ser Val Gly Gln Asp Val Arg
             305                 310                 315

Cys Arg Arg Leu Val Arg Glu Gly Thr Tyr Pro Arg Arg Pro Gly
             320                 325                 330

Ser Ser Pro Lys Val Pro Leu His Cys Val Asp Thr Arg Glu Ser
             335                 340                 345

Ala Ala Arg Gly Pro Thr Ile Leu
             350
```

<210> 398
<211> 23
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-23
<223> Synthetic construct.

<400> 398
 ccctgccagc cgagagcttc acc 23

<210> 399
<211> 23
<212> DNA

<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-23
<223> Synthetic construct.

<400> 399
 ggttggtgcc cgaaaggtcc agc 23

<210> 400
<211> 44
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-44
<223> Synthetic construct.

<400> 400
 caaccccaag cttaactggg caggagctga ggtgttttca ggcc 44

<210> 401
<211> 1571
<212> DNA
<213> Homo sapiens

<400> 401
 gatggcgcag ccacagcttc tgtgagattc gatttctccc cagttcccct 50

 gtgggtctga ggggaccaga agggtgagct acgttggctt tctggaaggg 100

 gaggctatat gcgtcaattc cccaaaacaa gttttgacat ttcccctgaa 150

 atgtcattct ctatctattc actgcaagtg cctgctgttc caggccttac 200

 ctgctgggca ctaacggcgg agccaggatg gggacagaat aaaggagcca 250

 cgacctgtgc caccaactcg cactcagact ctgaactcag acctgaaatc 300

 ttctcttcac gggaggcttg gcagtttttc ttactcctgt ggtctccaga 350

 tttcaggcct aagatgaaag cctctagtct tgccttcagc cttctctctg 400

 ctgcgtttta tctcctatgg actccttcca ctggactgaa gacactcaat 450

 ttgggaagct gtgtgatcgc cacaaacctt caggaaatac gaaatggatt 500

 ttctgagata cggggcagtg tgcaagccaa agatggaaac attgacatca 550

 gaatcttaag gaggactgag tctttgcaag acacaaagcc tgcgaatcga 600

 tgctgcctcc tgcgccattt gctaagactc tatctggaca gggtatttaa 650

 aaactaccag accccctgacc attatactct ccggaagatc agcagcctcg 700

 ccaattcctt tcttaccatc aagaaggacc tccggctctc tcatgcccac 750

375

<210> 402
<211> 261
<212> PRT
<213> Homo sapiens

<400> 402

```
Met Arg Gln Phe Pro Lys Thr Ser Phe Asp Ile Ser Pro Glu Met
 1               5                  10                  15

Ser Phe Ser Ile Tyr Ser Leu Gln Val Pro Ala Val Pro Gly Leu
                20                  25                  30

Thr Cys Trp Ala Leu Thr Ala Glu Pro Gly Trp Gly Gln Asn Lys
                35                  40                  45

Gly Ala Thr Thr Cys Ala Thr Asn Ser His Ser Asp Ser Glu Leu
                50                  55                  60

Arg Pro Glu Ile Phe Ser Ser Arg Glu Ala Trp Gln Phe Phe Leu
                65                  70                  75

Leu Leu Trp Ser Pro Asp Phe Arg Pro Lys Met Lys Ala Ser Ser
                80                  85                  90
```

```
Leu Ala Phe Ser Leu Leu Ser Ala Ala Phe Tyr Leu Leu Trp Thr
                95                  100                  105

Pro Ser Thr Gly Leu Lys Thr Leu Asn Leu Gly Ser Cys Val Ile
                110                 115                  120

Ala Thr Asn Leu Gln Glu Ile Arg Asn Gly Phe Ser Glu Ile Arg
                125                 130                  135

Gly Ser Val Gln Ala Lys Asp Gly Asn Ile Asp Ile Arg Ile Leu
                140                 145                  150

Arg Arg Thr Glu Ser Leu Gln Asp Thr Lys Pro Ala Asn Arg Cys
                155                 160                  165

Cys Leu Leu Arg His Leu Leu Arg Leu Tyr Leu Asp Arg Val Phe
                170                 175                  180

Lys Asn Tyr Gln Thr Pro Asp His Tyr Thr Leu Arg Lys Ile Ser
                185                 190                  195

Ser Leu Ala Asn Ser Phe Leu Thr Ile Lys Lys Asp Leu Arg Leu
                200                 205                  210

Ser His Ala His Met Thr Cys His Cys Gly Glu Glu Ala Met Lys
                215                 220                  225

Lys Tyr Ser Gln Ile Leu Ser His Phe Glu Lys Leu Glu Pro Gln
                230                 235                  240

Ala Ala Val Val Lys Ala Leu Gly Glu Leu Asp Ile Leu Leu Gln
                245                 250                  255

Trp Met Glu Glu Thr Glu
                260
```

<210> 403
<211> 28
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-28
<223> Synthetic construct.

<400> 403
 ctcctgtggt ctccagattt caggccta 28

<210> 404
<211> 26
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-26
<223> Synthetic construct.

<400> 404
  agtcctcctt aagattctga tgtcaa 26

<210> 405
<211> 998
<212> DNA
<213> Homo sapiens

<400> 405
 ccgttatcgt cttgcgctac tgctgaatgt ccgtcccgga ggaggaggag 50

 aggcttttgc cgctgaccca gagatggccc cgagcgagca aattcctact 100

 gtccggctgc gcggctaccg tggccgagct agcaaccttt cccctggatc 150

 tcacaaaaac tcgactccaa atgcaaggag aagcagctct tgctcggttg 200

 ggagacggtg caagagaatc tgcccctat aggggaatgg tgcgcacagc 250

 cctagggatc attgaagagg aaggctttct aaagctttgg caaggagtga 300

 cacccgccat ttacagacac gtagtgtatt ctggaggtcg aatggtcaca 350

 tatgaacatc tccgagaggt tgtgtttggc aaaagtgaag atgagcatta 400

 tccccctttgg aaatcagtca ttggagggat gatggctggt gttattggcc 450

 agtttttagc caatccaact gacctagtga aggttcagat gcaaatggaa 500

 ggaaaaagga aactggaagg aaaaccattg cgatttcgtg gtgtacatca 550

 tgcatttgca aaaatcttag ctgaaggagg aatacgaggg ctttgggcag 600

 gctgggtacc caatatacaa agagcagcac tggtgaatat gggagattta 650

 accacttatg atacagtgaa acactacttg gtattgaata caccacttga 700

 ggacaatatc atgactcacg gtttatcaag tttatgttct ggactggtag 750

 cttctattct gggaacacca gccgatgtca tcaaaagcag aataatgaat 800

 caaccacgag ataaacaagg aagggggactt ttgtataaat catcgactga 850

 ctgcttgatt caggctgttc aaggtgaagg attcatgagt ctatataaag 900

 gcttttacc atcttggctg agaatgaccc cttggtcaat ggtgttctgg 950

 cttacttatg aaaaaatcag agagatgagt ggagtcagtc cattttaa 998

<210> 406
<211> 323
<212> PRT
<213> Homo sapiens

<400> 406
 Met Ser Val Pro Glu Glu Glu Arg Leu Leu Pro Leu Thr Gln
  1   5   10   15

378

```
Arg Trp Pro Arg Ala Ser Lys Phe Leu Leu Ser Gly Cys Ala Ala
            20              25                      30

Thr Val Ala Glu Leu Ala Thr Phe Pro Leu Asp Leu Thr Lys Thr
            35              40                      45

Arg Leu Gln Met Gln Gly Glu Ala Ala Leu Ala Arg Leu Gly Asp
            50              55                      60

Gly Ala Arg Glu Ser Ala Pro Tyr Arg Gly Met Val Arg Thr Ala
            65              70                      75

Leu Gly Ile Ile Glu Glu Glu Gly Phe Leu Lys Leu Trp Gln Gly
            80              85                      90

Val Thr Pro Ala Ile Tyr Arg His Val Val Tyr Ser Gly Gly Arg
            95              100                     105

Met Val Thr Tyr Glu His Leu Arg Glu Val Val Phe Gly Lys Ser
            110             115                     120

Glu Asp Glu His Tyr Pro Leu Trp Lys Ser Val Ile Gly Gly Met
            125             130                     135

Met Ala Gly Val Ile Gly Gln Phe Leu Ala Asn Pro Thr Asp Leu
            140             145                     150

Val Lys Val Gln Met Gln Met Glu Gly Lys Arg Lys Leu Glu Gly
            155             160                     165

Lys Pro Leu Arg Phe Arg Gly Val His His Ala Phe Ala Lys Ile
            170             175                     180

Leu Ala Glu Gly Gly Ile Arg Gly Leu Trp Ala Gly Trp Val Pro
            185             190                     195

Asn Ile Gln Arg Ala Ala Leu Val Asn Met Gly Asp Leu Thr Thr
            200             205                     210

Tyr Asp Thr Val Lys His Tyr Leu Val Leu Asn Thr Pro Leu Glu
            215             220                     225

Asp Asn Ile Met Thr His Gly Leu Ser Ser Leu Cys Ser Gly Leu
            230             235                     240

Val Ala Ser Ile Leu Gly Thr Pro Ala Asp Val Ile Lys Ser Arg
            245             250                     255

Ile Met Asn Gln Pro Arg Asp Lys Gln Gly Arg Gly Leu Leu Tyr
            260             265                     270

Lys Ser Ser Thr Asp Cys Leu Ile Gln Ala Val Gln Gly Glu Gly
            275             280                     285

Phe Met Ser Leu Tyr Lys Gly Phe Leu Pro Ser Trp Leu Arg Met
            290             295                     300

Thr Pro Trp Ser Met Val Phe Trp Leu Thr Tyr Glu Lys Ile Arg
```

Glu Met Ser Gly Val Ser Pro Phe
                    320

<210> 407
<211> 31
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-31
<223> Synthetic construct.

<400> 407
 cgcggatccc gttatcgtct tgcgctactg c 31

<210> 408
<211> 34
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-34
<223> Synthetic construct.

<400> 408
 gcggaattct taaaatggac tgactccact catc 34

<210> 409
<211> 1487
<212> DNA
<213> Homo sapiens

<400> 409
 cggacgcgtg ggcgcgggac gccggcaggg ttgtggcgca gcagtctcct 50

 tcctgcgcgc gcgcctgaag tcggcgtggg cgtttgagga agctgggata 100

 cagcatttaa tgaaaaattt atgcttaaga agtaaaaatg gcaggcttcc 150

 tagataattt tcgttggcca gaatgtgaat gtattgactg gagtgagaga 200

 agaaatgctg tggcatctgt tgtcgcaggt atattgtttt ttacaggctg 250

 gtggataatg attgatgcag ctgtggtgta tcctaagcca gaacagttga 300

 accatgcctt tcacacatgt ggtgtatttt ccacattggc tttcttcatg 350

 ataaatgctg tatccaatgc tcaggtgaga ggtgatagct atgaaagcgg 400

 ctgtttagga agaacaggtg ctcgagtttg gcttttcatt ggtttcatgt 450

 tgatgtttgg gtcacttatt gcttccatgt ggattctttt tggtgcatat 500

 gttacccaaa atactgatgt ttatccggga ctagctgtgt tttttcaaaa 550

380

```
tgcacttata tttttttagca ctctgatcta caaatttgga agaaccgaag 600

agctatggac ctgagatcac ttcttaagtc acattttcct tttgttatat 650

tctgtttgta gataggtttt ttatctctca gtacacattg ccaaatggag 700

tagattgtac attaaatgtt ttgtttcttt acatttttat gttctgagtt 750

ttgaaatagt tttatgaaat ttctttattt ttcattgcat agactgttaa 800

tatgtatata atacaagact atatgaattg gataatgagt atcagttttt 850

tattcctgag atttagaact tgatctactc cctgagccag ggttacatca 900

tcttgtcatt ttagaagtaa ccactcttgt ctctctggct gggcacggtg 950

gctcatgcct gtaatcccag cactttggga ggccgaggcg ggccgattgc 1000

ttgaggtcaa gtgtttgaga ccagcctggc caacatggcg aaaccccatc 1050

tactaaaaat acaaaaatta gccaggcatg gtggtgggtg cctgtaatcc 1100

cagctacctg ggaggctgag gcaggagaat cgcttgaacc cggggggcag 1150

aggttgcagt gagctgagtt tgcgccactg cactctagcc tgggggagaa 1200

agtgaaactc cctctcaaaa aaaagaccac tctcagtatc tctgatttct 1250

gaagatgtac aaaaaaatat agcttcatat atctggaatg agcactgagc 1300

cataaaaggt tttcagcaag ttgtaactta ttttggccta aaaatgaggt 1350

tttttttggta aagaaaaaat atttgttctt atgtattgaa gaagtgtact 1400

tttatataat gatttttttaa atgcccaaag gactagtttg aaagcttctt 1450

ttaaaaagaa ttcctctaat atgactttat gtgagaa 1487
```

<210> 410
<211> 158
<212> PRT
<213> Homo sapiens

<400> 410

```
  Met Ala Gly Phe Leu Asp Asn Phe Arg Trp Pro Glu Cys Glu Cys
  1               5                   10                  15

  Ile Asp Trp Ser Glu Arg Arg Asn Ala Val Ala Ser Val Val Ala
                  20                  25                  30

  Gly Ile Leu Phe Phe Thr Gly Trp Trp Ile Met Ile Asp Ala Ala
                  35                  40                  45

  Val Val Tyr Pro Lys Pro Glu Gln Leu Asn His Ala Phe His Thr
                  50                  55                  60

  Cys Gly Val Phe Ser Thr Leu Ala Phe Phe Met Ile Asn Ala Val
                  65                  70                  75
```

```
Ser Asn Ala Gln Val Arg Gly Asp Ser Tyr Glu Ser Gly Cys Leu
                80              85              90

Gly Arg Thr Gly Ala Arg Val Trp Leu Phe Ile Gly Phe Met Leu
                95              100             105

Met Phe Gly Ser Leu Ile Ala Ser Met Trp Ile Leu Phe Gly Ala
                110             115             120

Tyr Val Thr Gln Asn Thr Asp Val Tyr Pro Gly Leu Ala Val Phe
                125 .           130             135

Phe Gln Asn Ala Leu Ile Phe Phe Ser Thr Leu Ile Tyr Lys Phe
             .  140             145             150

Gly Arg Thr Glu Glu Leu Trp Thr
                155
```

<210> 411
<211> 20
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-20
<223> Synthetic construct.

<400> 411
 gtttgaggaa gctgggatac 20

<210> 412
<211> 20
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-20
<223> Synthetic construct.

<400> 412
 ccaaactcga gcacctgttc 20

<210> 413
<211> 40
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-40
<223> Synthetic construct.

<400> 413
 atggcaggct tcctagataa ttttcgttgg ccagaatgtg 40

<210> 414

<211> 1337
<212> DNA
<213> Homo sapiens

<400> 414
gttgatggca aacttcctca aaggaggggc agagcctgcg cagggcagga 50

gcagctggcc cactggcggc ccgcaacact ccgtctcacc ctctgggccc 100

actgcatcta gaggagggcc gtctgtgagg ccactacccc tccagcaact 150

gggaggtggg actgtcagaa gctggcccag ggtggtggtc agctgggtca 200

gggacctacg gcacctgctg gaccacctcg ccttctccat cgaagcaggg 250

aagtgggagc ctcgagccct cgggtggaag ctgaccccaa gccacccttc 300

acctggacag gatgagagtg tcaggtgtgc ttcgcctcct ggccctcatc 350

tttgccatag tcacgacatg gatgtttatt cgaagctaca tgagcttcag 400

catgaaaacc atccgtctgc cacgctggct ggcagcctcg cccaccaagg 450

agatccaggt taaaaagtac aagtgtggcc tcatcaagcc ctgcccagcc 500

aactactttg cgtttaaaat ctgcagtggg gccgccaacg tcgtgggccc 550

tactatgtgc tttgaagacc gcatgatcat gagtcctgtg aaaaacaatg 600

tgggcagagg cctaaacatc gccctggtga atggaaccac gggagctgtg 650

ctgggacaga aggcatttga catgtactct ggagatgtta tgcacctagt 700

gaaattcctt aaagaaattc cgggggggtgc actggtgctg gtggcctcct 750

acgacgatcc agggaccaaa atgaacgatg aaagcaggaa actcttctct 800

gacttgggga gttcctacgc aaaacaactg ggcttccggg acagctgggt 850

cttcatagga gccaaagacc tcaggggtaa aagccccttt gagcagttct 900

taaagaacag cccagacaca aacaaatacg agggatggcc agagctgctg 950

gagatggagg gctgcatgcc cccgaagcca ttttagggtg gctgtggctc 1000

ttcctcagcc aggggcctga agaagctcct gcctgactta ggagtcagag 1050

cccggcaggg gctgaggagg aggagcaggg ggtgctgcgt ggaaggtgct 1100

gcaggtcctt gcacgctgtg tcgcgcctct cctcctcgga aacagaaccc 1150

tcccacagca catcctaccc ggaagaccag cctcagaggg tccttctgga 1200

accagctgtc tgtggagaga atggggtgct ttcgtcaggg actgctgacg 1250

gctggtcctg aggaaggaca aactgcccag acttgagccc aattaaattt 1300

tatttttgct ggttttgaaa aaaaaaaaaa aaaaaaa 1337

383

<210> 415
<211> 224
<212> PRT
<213> Homo sapiens

<400> 415

```
Met Arg Val Ser Gly Val Leu Arg Leu Leu Ala Leu Ile Phe Ala
 1               5                  10                  15

Ile Val Thr Thr Trp Met Phe Ile Arg Ser Tyr Met Ser Phe Ser
                20                  25                  30

Met Lys Thr Ile Arg Leu Pro Arg Trp Leu Ala Ala Ser Pro Thr
                35                  40                  45

Lys Glu Ile Gln Val Lys Lys Tyr Lys Cys Gly Leu Ile Lys Pro
                50                  55                  60

Cys Pro Ala Asn Tyr Phe Ala Phe Lys Ile Cys Ser Gly Ala Ala
                65                  70                  75

Asn Val Val Gly Pro Thr Met Cys Phe Glu Asp Arg Met Ile Met
                80                  85                  90

Ser Pro Val Lys Asn Asn Val Gly Arg Gly Leu Asn Ile Ala Leu
                95                 100                 105

Val Asn Gly Thr Thr Gly Ala Val Leu Gly Gln Lys Ala Phe Asp
               110                 115                 120

Met Tyr Ser Gly Asp Val Met His Leu Val Lys Phe Leu Lys Glu
               125                 130                 135

Ile Pro Gly Gly Ala Leu Val Leu Val Ala Ser Tyr Asp Asp Pro
               140                 145                 150

Gly Thr Lys Met Asn Asp Glu Ser Arg Lys Leu Phe Ser Asp Leu
               155                 160                 165

Gly Ser Ser Tyr Ala Lys Gln Leu Gly Phe Arg Asp Ser Trp Val
               170                 175                 180

Phe Ile Gly Ala Lys Asp Leu Arg Gly Lys Ser Pro Phe Glu Gln
               185                 190                 195

Phe Leu Lys Asn Ser Pro Asp Thr Asn Lys Tyr Glu Gly Trp Pro
               200                 205                 210

Glu Leu Leu Glu Met Glu Gly Cys Met Pro Pro Lys Pro Phe
               215                 220
```

<210> 416
<211> 21
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence

<222> 1-21
<223> Synthetic construct.

<400> 416
 gccatagtca cgacatggat g 21

<210> 417
<211> 18
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 417
 ggatggccag agctgctg 18

<210> 418
<211> 26
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-26
<223> Synthetic construct.

<400> 418
 aaagtacaag tgtggcctca tcaagc 26

<210> 419
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 419
 tctgactcct aagtcaggca ggag 24

<210> 420
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 420
 attctctcca cagacagctg gttc 24

<210> 421
<211> 46
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-46
<223> Synthetic construct.

<400> 421
 gtacaagtgt ggcctcatca agccctgccc agccaactac tttgcg 46

<210> 422
<211> 1701
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 1528
<223> unknown base

<400> 422
 gagactgcag agggagataa agagagaggg caaagaggca gcaagagatt 50

 tgtcctgggg atccagaaac ccatgatacc ctactgaaca ccgaatcccc 100

 tggaagccca cagagacaga gacagcaaga gaagcagaga taaatacact 150

 cacgccagga gctcgctcgc tctctctctc tctctctcac tcctccctcc 200

 ctctctctct gcctgtccta gtcctctagt cctcaaattc ccagtcccct 250

 gcaccccttc ctgggacact atgttgttct ccgccctcct gctggaggtg 300

 atttggatcc tggctgcaga tgggggtcaa cactggacgt atgagggccc 350

 acatggtcag gaccattggc cagcctctta ccctgagtgt ggaaacaatg 400

 cccagtcgcc catcgatatt cagacagaca gtgtgacatt tgaccctgat 450

 ttgcctgctc tgcagcccca cggatatgac cagcctggca ccgagccttt 500

 ggacctgcac aacaatggcc acacagtgca actctctctg ccctctaccc 550

 tgtatctggg tggacttccc cgaaaatatg tagctgccca gctccacctg 600

 cactggggtc agaaaggatc cccaggggggg tcagaacacc agatcaacag 650

 tgaagccaca tttgcagagc tccacattgt acattatgac tctgattcct 700

 atgacagctt gagtgaggct gctgagaggc ctcagggcct ggctgtcctg 750

 ggcatcctaa ttgaggtggg tgagactaag aatatagctt atgaacacat 800

 tctgagtcac ttgcatgaag tcaggcataa agatcagaag acctcagtgc 850

ctcccttcaa cctaagagag ctgctcccca aacagctggg gcagtacttc 900

cgctacaatg gctcgctcac aactccccct tgctaccaga gtgtgctctg 950

gacagttttt tatagaaggt cccagatttc aatggaacag ctggaaaagc 1000

ttcaggggac attgttctcc acagaagagg agccctctaa gcttctggta 1050

cagaactacc gagcccttca gcctctcaat cagcgcatgg tctttgcttc 1100

tttcatccaa gcaggatcct cgtataccac aggtgaaatg ctgagtctag 1150

gtgtaggaat cttggttggc tgtctctgcc ttctcctggc tgtttatttc 1200

attgctagaa agattcggaa gaagaggctg gaaaaccgaa agagtgtggt 1250

cttcacctca gcacaagcca cgactgaggc ataaattcct tctcagatac 1300

catggatgtg gatgacttcc cttcatgcct atcaggaagc ctctaaaatg 1350

gggtgtagga tctggccaga aacactgtag gagtagtaag cagatgtcct 1400

ccttcccctg gacatctctt agagaggaat ggacccaggc tgtcattcca 1450

ggaagaactg cagagccttc agcctctcca aacatgtagg aggaaatgag 1500

gaaatcgctg tgttgttaat gcagaganca aactctgttt agttgcaggg 1550

gaagtttggg atataccca aagtcctcta cccctcact tttatggccc 1600

tttccctaga tatactgcgg gatctctcct taggataaag agttgctgtt 1650

gaagttgtat atttttgatc aatatatttg gaaattaaag tttctgactt 1700

t 1701

<210> 423
<211> 337
<212> PRT
<213> Homo sapiens

<400> 423

```
Met Leu Phe Ser Ala Leu Leu Leu Glu Val Ile Trp Ile Leu Ala
 1               5                  10                  15

Ala Asp Gly Gly Gln His Trp Thr Tyr Glu Gly Pro His Gly Gln
                20                  25                  30

Asp His Trp Pro Ala Ser Tyr Pro Glu Cys Gly Asn Asn Ala Gln
                35                  40                  45

Ser Pro Ile Asp Ile Gln Thr Asp Ser Val Thr Phe Asp Pro Asp
                50                  55                  60

Leu Pro Ala Leu Gln Pro His Gly Tyr Asp Gln Pro Gly Thr Glu
                65                  70                  75

Pro Leu Asp Leu His Asn Asn Gly His Thr Val Gln Leu Ser Leu
```

387

```
                      80                  85                  90
Pro Ser Thr Leu Tyr Leu Gly Gly Leu Pro Arg Lys Tyr Val Ala
                    95                 100                 105

Ala Gln Leu His Leu His Trp Gly Gln Lys Gly Ser Pro Gly Gly
                   110                 115                 120

Ser Glu His Gln Ile Asn Ser Glu Ala Thr Phe Ala Glu Leu His
                   125                 130                 135

Ile Val His Tyr Asp Ser Asp Ser Tyr Asp Ser Leu Ser Glu Ala
                   140                 145                 150

Ala Glu Arg Pro Gln Gly Leu Ala Val Leu Gly Ile Leu Ile Glu
                   155                 160                 165

Val Gly Glu Thr Lys Asn Ile Ala Tyr Glu His Ile Leu Ser His
                   170                 175                 180

Leu His Glu Val Arg His Lys Asp Gln Lys Thr Ser Val Pro Pro
                   185                 190                 195

Phe Asn Leu Arg Glu Leu Leu Pro Lys Gln Leu Gly Gln Tyr Phe
                   200                 205                 210

Arg Tyr Asn Gly Ser Leu Thr Thr Pro Pro Cys Tyr Gln Ser Val
                   215                 220                 225

Leu Trp Thr Val Phe Tyr Arg Arg Ser Gln Ile Ser Met Glu Gln
                   230                 235                 240

Leu Glu Lys Leu Gln Gly Thr Leu Phe Ser Thr Glu Glu Glu Pro
                   245                 250                 255

Ser Lys Leu Leu Val Gln Asn Tyr Arg Ala Leu Gln Pro Leu Asn
                   260                 265                 270

Gln Arg Met Val Phe Ala Ser Phe Ile Gln Ala Gly Ser Ser Tyr
                   275                 280                 285

Thr Thr Gly Glu Met Leu Ser Leu Gly Val Gly Ile Leu Val Gly
                   290                 295                 300

Cys Leu Cys Leu Leu Leu Ala Val Tyr Phe Ile Ala Arg Lys Ile
                   305                 310                 315

Arg Lys Lys Arg Leu Glu Asn Arg Lys Ser Val Val Phe Thr Ser
                   320                 325                 330

Ala Gln Ala Thr Thr Glu Ala
                   335
```

<210> 424
<211> 18
<212> DNA
<213> Artificial

388

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 424
 gtaaagtcgc tggccagc 18

<210> 425
<211> 18
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 425
 cccgatctgc ctgctgta 18

<210> 426
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 426
 ctgcactgta tggccattat tgtg 24

<210> 427
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45
<223> Synthetic construct.

<400> 427
 cagaaaccca tgatacccta ctgaacaccg aatcccctgg aagcc 45

<210> 428
<211> 1073
<212> DNA
<213> Homo sapiens

<400> 428
 aatttttcac cagagtaaac ttgagaaacc aactggacct tgagtattgt 50

 acattttgcc tcgtggaccc aaaggtagca atctgaaaca tgaggagtac 100

 gattctactg ttttgtcttc taggatcaac tcggtcatta ccacagctca 150

<210> 429
<211> 209
<212> PRT
<213> Homo sapiens

<400> 429
Met Arg Ser Thr Ile Leu Leu Phe Cys Leu Leu Gly Ser Thr Arg
1   5   10   15

Ser Leu Pro Gln Leu Lys Pro Ala Leu Gly Leu Pro Pro Thr Lys
                20   25   30

Leu Ala Pro Asp Gln Gly Thr Leu Pro Asn Gln Gln Gln Ser Asn
                35   40   45

Gln Val Phe Pro Ser Leu Ser Leu Ile Pro Leu Thr Gln Met Leu
                50   55   60

Thr Leu Gly Pro Asp Leu His Leu Leu Asn Pro Ala Ala Gly Met
                65   70   75

```
Thr Pro Gly Thr Gln Thr His Pro Leu Thr Leu Gly Gly Leu Asn
            80              85                      90

Val Gln Gln Gln Leu His Pro His Val Leu Pro Ile Phe Val Thr
            95              100                     105

Gln Leu Gly Ala Gln Gly Thr Ile Leu Ser Ser Glu Glu Leu Pro
            110             115                     120

Gln Ile Phe Thr Ser Leu Ile Ile His Ser Leu Phe Pro Gly Gly
            125             130                     135

Ile Leu Pro Thr Ser Gln Ala Gly Ala Asn Pro Asp Val Gln Asp
            140             145                     150

Gly Ser Leu Pro Ala Gly Gly Ala Gly Val Asn Pro Ala Thr Gln
            155             160                     165

Gly Thr Pro Ala Gly Arg Leu Pro Thr Pro Ser Gly Thr Asp Asp
            170             175                     180

Asp Phe Ala Val Thr Thr Pro Ala Gly Ile Gln Arg Ser Thr His
            185             190                     195

Ala Ile Glu Glu Ala Thr Thr Glu Ser Ala Asn Gly Ile Gln
            200             205
```

<210> 430
<211> 1257
<212> DNA
<213> Homo Sapien

<400> 430

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ggagagaggc gcgcgggtga aaggcgcatt gatgcagcct gcggcggcct 50

cggagcgcgg cggagccaga cgctgaccac gttcctctcc tcggtctcct 100

ccgcctccag ctccgcgctg cccggcagcc gggagccatg cgaccccagg 150

gccccgccgc ctccccgcag cggctccgcg gcctcctgct gctcctgctg 200

ctgcagctgc ccgcgccgtc gagcgcctct gagatcccca aggggaagca 250

aaaggcgcag ctccggcaga gggaggtggt ggacctgtat aatggaatgt 300

gcttacaagg gccagcagga gtgcctggtc gagacgggag ccctggggcc 350

aatgttattc cgggtacacc tgggatccca ggtcgggatg gattcaaagg 400

agaaaagggg gaatgtctga gggaaagctt tgaggagtcc tggacaccca 450

actacaagca gtgttcatgg agttcattga attatggcat agatcttggg 500

aaaattgcgg agtgtacatt tacaaagatg cgttcaaata gtgctctaag 550

agttttgttc agtggctcac ttcggctaaa atgcagaaat gcatgctgtc 600

agcgttggta tttcacattc aatggagctg aatgttcagg acctcttccc 650
```

```
attgaagcta taatttattt ggaccaagga agccctgaaa tgaattcaac 700

aattaatatt catcgcactt cttctgtgga aggactttgt gaaggaattg 750

gtgctggatt agtggatgtt gctatctggg ttggcacttg ttcagattac 800

ccaaaaggag atgcttctac tggatggaat tcagtttctc gcatcattat 850

tgaagaacta ccaaaataaa tgctttaatt ttcatttgct acctcttttt 900

ttattatgcc ttggaatggt tcacttaaat gacattttaa ataagtttat 950

gtatacatct gaatgaaaag caaagctaaa tatgtttaca gaccaaagtg 1000

tgatttcaca ctgttttaa atctagcatt attcattttg cttcaatcaa 1050

aagtggtttc aatatttttt ttagttggtt agaatacttt cttcatagtc 1100

acattctctc aacctataat ttggaatatt gttgtggtct tttgtttttt 1150

ctcttagtat agcatttta aaaaaatata aaagctacca atctttgtac 1200

aatttgtaaa tgttaagaat ttttttata tctgttaaat aaaaattatt 1250

tccaaca 1257
```

<210> 431
<211> 243
<212> PRT
<213> Homo Sapien

<400> 431
```
Met Arg Pro Gln Gly Pro Ala Ala Ser Pro Gln Arg Leu Arg Gly
 1               5                  10                  15

Leu Leu Leu Leu Leu Leu Leu Gln Leu Pro Ala Pro Ser Ser Ala
                20                  25                  30

Ser Glu Ile Pro Lys Gly Lys Gln Lys Ala Gln Leu Arg Gln Arg
                35                  40                  45

Glu Val Val Asp Leu Tyr Asn Gly Met Cys Leu Gln Gly Pro Ala
                50                  55                  60

Gly Val Pro Gly Arg Asp Gly Ser Pro Gly Ala Asn Val Ile Pro
                65                  70                  75

Gly Thr Pro Gly Ile Pro Gly Arg Asp Gly Phe Lys Gly Glu Lys
                80                  85                  90

Gly Glu Cys Leu Arg Glu Ser Phe Glu Glu Ser Trp Thr Pro Asn
                95                  100                 105

Tyr Lys Gln Cys Ser Trp Ser Ser Leu Asn Tyr Gly Ile Asp Leu
                110                 115                 120

Gly Lys Ile Ala Glu Cys Thr Phe Thr Lys Met Arg Ser Asn Ser
                125                 130                 135
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Ala Leu Arg Val Leu Phe Ser Gly Ser Leu Arg Leu Lys Cys Arg
              140                 145                 150

Asn Ala Cys Cys Gln Arg Trp Tyr Phe Thr Phe Asn Gly Ala Glu
              155                 160                 165

Cys Ser Gly Pro Leu Pro Ile Glu Ala Ile Ile Tyr Leu Asp Gln
              170                 175                 180

Gly Ser Pro Glu Met Asn Ser Thr Ile Asn Ile His Arg Thr Ser
              185                 190                 195

Ser Val Glu Gly Leu Cys Glu Gly Ile Gly Ala Gly Leu Val Asp
              200                 205                 210

Val Ala Ile Trp Val Gly Thr Cys Ser Asp Tyr Pro Lys Gly Asp
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Ala Ser Thr Gly Trp Asn Ser Val Ser Arg Ile Ile Ile Glu Glu
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Leu Pro Lys
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